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FACTORY ESTATES AND POST-WAR DEVELOPMENT

THE successful career during the last 20 years of the Slough Estates, which embrace 573 factories, built, let on leases and serviced, is an ample justification for the claims of this undertaking, under the chairmanship of Mr. A. Noel Mobbs, to set out its views on the reorganisation of industrial areas for efficiently fulfilling the demands of peace after the termination of the present war. The site of the Slough Estates was acquired by the Government in 1917, for the purpose of building extensive works to recondition motor transport for the R.A.S.C.; the purchase was made under the advice of a well-known member of the Town Planning Institute, but not much had been done before the war terminated and the decision was made to accept an offer to purchase from the present owners, which more than recouped the Government for their expenditure.

Mr. Mobbs, on behalf of the Estates, has now issued a booklet entitled, "Adapting War-time Sites to Post-War Uses," well illustrated by explanatory maps and diagrams. In this, Slough is not, as might have been imagined, taken as an example, probably as it is not now an integrally war-time site. Another area, farther to the west, surrounding a Government manufacturing group, is examined in detail with a view to its programme for the future. This group is situated at a junction on a main railway line, and the present employees are accommodated in the adjacent small town and the neighbouring villages.

The problem which this publication aims at solving is stated as follows: "The Government is thought to be predisposed to decentralisation and to the grouping together of differing industries. Many war-time sites exist that appear at first sight well suited to become new industrial centres. How are these to be selected? How are the new workers to be attracted to them? How is co-operation to be developed with the existing habits and work of the locality? In fact, how is the pre-war life of over-congested towns that are divorced from the decaying country-side to become harmonised in a progressive post-war world?"

The first map illustrates the existing conditions; this is followed by one indicating possible future industrial developments and locations for housing the workers for these. From this we pass on to a plan for the complementing agricultural allocations under the headings of arable and pasture, mixed farming, orchards, woodlands and reserves for public recreation, with village extensions to house additional farm workers and those employed in ancillary local industries. A little to the south of the main industrial group an agricultural centre is proposed; to provide for marketing, hiring and repairing plant, and also including an agricultural experimental station, a veterinary service, and a farm training school.

In support of the validity of the proposal shown on these maps, very clear and explicit survey sheets are added, giving information collected from numerous sources, such as the Ordnance and Geological Surveys, the land utilisation survey, Commission on Ancient Monuments, Census and Local Statistics, Kelly's County Directories, Post Office and other official publications. This series of maps is of especial interest to the town planner, as affording good examples of graphic presentation of the conditions; they have been specially prepared by the Association for Planning and Regional Reconstruction.

Map (1) shows the contours with special markings for escarpments; (2) the geological and surface formations; (3) water and drainage, including wells, springs and reservoirs, streams and land liable to floods; (4) present use of land, arable, meadow, rough pasture, orchards and housing; (5) sites for preservation, ancient remains and historic buildings; (6 and 7) distribution and growth of population with administrative boundaries; (8) occupations and industries and the numbers employed; (9) communications and traffic flow on main roads; (10) educational and medical services; (11) social and commercial facilities, churches, post offices, shops, public houses, etc.; (12) character of soil from the agricultural aspect. All this series is in black and white, but the maps can be easily read and form a useful guide to method.

In addition, the publication includes a specimen of the appropriate development for a small town, which assumes a growth from a pre-war population of 6,500 to 15,000, the additional 8,500 being made up of 1,700 in constructive industry, 1,700 in service industry and 5,100 in the home. It is recognised that as there is a town of some 100,000 within 12 miles, an increase above the estimated figures is unlikely. The existing town has on its north-east side a small river, then the railway, and further away a main arterial road; the land between the river and the railway is allocated to industry with an open strip of allotments and recreation ground between the river and the residential area. The latter is intersected on an east-west line by a tributary stream, and the banks of this are reserved as park land; other play and sports grounds are also provided. There are a few main routes through the occupied area, but bus traffic and visiting vehicles are diverted as much as possible from shopping and residential streets; the service roads are designed to avoid fast speed for domestic traffic and an independent network of footpaths and cycle tracks links the homes with bus stops, shops, recreation and other centres; further studies in detail would help to define routes to schools, etc., which might avoid crossing any traffic routes.

The industrial activities of such a town as this form the subject of a short report which the author is eminently qualified to produce. Based on the experience at Slough, it is found that most classes of manufacture can be conducted in one of four types of single-storey factories ranging in area from about 3,000 to 15,000 square feet, with from 50 per cent. to 100 per cent. of back land for external storage or expansion. On the average each worker requires about 400 square feet of the gross area, and from these figures it is possible to calculate the relative proportions of the areas demanded for factories and the housing of the workers. An organised group of factories also simplifies the problems of the supply of power, of canteens, crèches, clinics and other desirable adjuncts and amenities.

NOTES AND NEWS

The "Revised" M.o.W. House.

A REVISED plan of the M.o.W. emergency factory-made house has been prepared, incorporating a number of amendments, and is illustrated on page 458. A full-size model in timber has been constructed in the Tate Gallery, Millbank.

"War Damage and Architects."

As already announced, Sir Malcolm Trustram Eve, K.C., Chairman of the War Damage Commission, will give a talk on the "War Damage Act and Architects" at an informal meeting of the R.I.B.A. on June 27. The Acting Secretary of the R.I.B.A. writes to say that while it is hoped that there will be a good attendance of London members, country members are urged not to come to London especially for the meeting in view of the Government's advice to avoid unnecessary travel and the recent request of the Railway Executive to postpone the holding of conferences, etc.

Sir Ian MacAlister.

MR. C. D. SPRAGG, Acting Secretary, R.I.B.A., writes: The accident to Sir Ian MacAlister, which occurred on March 2, proved to be more serious than was at first supposed, but after a second operation he is now making satisfactory progress.

Survey of Ironstone Industry.

THE Minister of Town and Country Planning has appointed Mr. A. H. S. Waters, V.C., M.Inst.C.E., F.G.S., of 25, Temple-row, Birmingham, to carry out a technical investigation of the ironstone industry of Northamptonshire, Lincolnshire and adjoining counties with a view to reporting upon the scope and efficiency of the measures at present employed by the industry for the restoration of land damaged by quarrying operations and ascertaining to what extent these measures could be extended or improved under present conditions and in the future.

Chartered Surveyors' President.

MR. JAMES BARR (Glasgow) has been elected President of the Chartered Surveyors' Institution. He was a member of the Uthwatt Committee on Compensation and Betterment (1941-42), and he is a Deputy-Commissioner for Scotland under the War Damage Act. He is also chairman of the committee of inquiry into this proposed Forth-Clyde canal. He is in his sixtieth year.

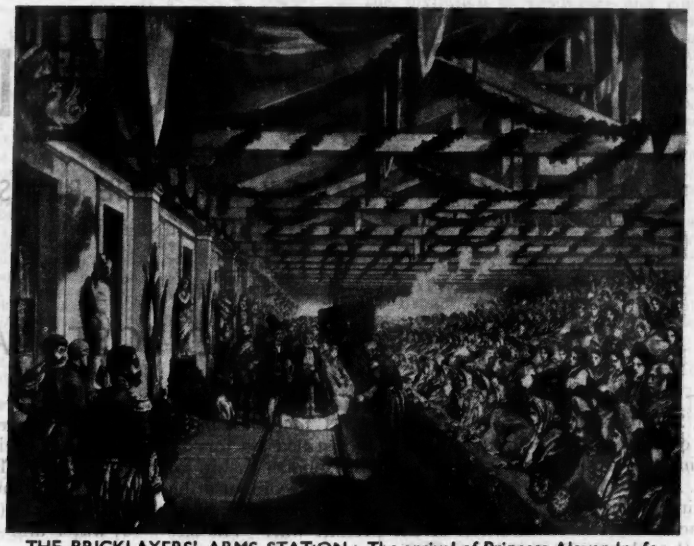
London Discussion Group on Planning.

PROFESSOR PATRICK ABERCROMBIE, Vice-President of the Town and Country Planning Association, and Planner of the L.C.C. and Greater London areas, and Mr. F. J. Osborn, Chairman of the Executive Committee of the Town and Country Planning Association, will meet a group of London members of the Association and others interested to-day, Friday, June 9, at 6.30 p.m., at 2, Savoy-hill, W.C.2, with a view to forming a Central London discussion group on town and country planning.

Municipal Engineers' Conference Cancelled.

IN view of the Government's request to associations to avoid holding conferences at the present time, the Institution of Municipal and County Engineers has postponed its annual conference, which was to have been held in London on June 23.

The annual business meeting of the Institution will take place at the Middlesex Guildhall, Westminster, on July 21. The business will be largely of a formal character, and will be followed by the installation of Mr. W. P. Robinson, C.B.E., County Engineer of Surrey, as President, in succession to Mr. L. St. G. Wilkinson, Borough Engineer of Wallasey.



THE BRICKLAYERS' ARMS STATION: The arrival of Princess Alexandra for her marriage to the Prince of Wales, March 7, 1863. (From a Contemporary print.) See facing page.

Finance for a National Road Plan.

THE Roads Improvement Association, in its annual report, states its intention, as soon as conditions permit, to initiate a vigorous campaign to secure the definite allocation of specified funds, on a long-term basis, to enable a national road plan for the modernisation of our road system to be prepared and carried out. For these efforts the Association seeks the active assistance of all interested in road construction and traffic circulation. "Without a definite pre-arranged annual allotment of funds," it is stated, "much of the valuable work being done by many organisations in creating and popularising modern designs and layouts for roads to facilitate traffic movement and eliminate danger will be lost, as there will simply be a return to the wasteful piecemeal methods of the pre-war era which have proved so disastrous."

Chartered Surveyors' Examinations.

Ninety-three candidates have been successful in the preliminary examinations, 1944, of the Chartered Surveyors' Institution. Mr. Leslie Gardner, 149, Replingham-road, S.W.18, has been awarded the Julian Rogers prize. Fifty candidates have passed the Special Test examination.

Architect's Estate.

Mr. Edwin James Sadgrove, F.R.I.B.A., of Staines, Middlesex, and of Hunter-street, W.C.1, architect and surveyor (net personalty £30,803), left estate valued at £31,223.

Quantity Surveyor's Estate.

MR. E. R. BABBS, quantity surveyor, late chairman of Freehold and Leasehold Investment Co., Ltd., and Prudential Mortgage Co., Ltd. (n.p. £52,456), left £63,655.

Town Planning Appointment, Essex.

MR. F. LONGSTRETH THOMPSON, B.Sc., F.S.I., A.M.Inst.C.E., P.P.T.P.I., has been appointed as County Planning Adviser to Essex County Council. Mr. Longstreth Thompson will take up his duties on July 1 next.

Professional Announcement.

MR. ERIC G. LYNDE, quantity surveyor, has taken offices at 41, Russell-square, W.C.1 (tel.: Museum 9095), to which address all correspondence should be sent.

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From *The Builder* of 1844

Saturday, June 8, 1844. Price 3d.

WE are pained by seeing the observations [in the proposed new Metropolitan Building Act] relative to the reinstitution of the use of chimney climbing-boys. . . . We can see no case sufficient for the retolerance of so inhuman a practice, and we trust that if there were in a Parliament, forgetful of its public duty in a Christian land, the bare shadow of a chance of repeal, the whole body of the humane in these realms would rise up in arms. . . . The most powerful argument against such a frightful scandal is the necessity which the continuance of such an Act would bring for an improved structure in flues themselves by obliging them to be made easier in their turns and of materials better than those used at present.

*** It was only in 1840 that the practice of using climbing-boys, castigated, among others, by Dickens, was discontinued. The leading article from which our extract is taken contains some gruesome accounts of small boys being roasted to death in the course of their enforced trade.

A RAILWAY CENTENARY

BRICKLAYERS' ARMS STATION.

THE Bricklayers' Arms station of the Southern Railway celebrated the centenary of its construction last month. It was an interesting building architecturally. Alas that the past tense should have to be used, for after a disastrous fire which occurred in July, 1936, most of what remained of the station, including the classical frontispiece, was demolished. All that survives to-day is the canopied entrance and shed behind, shown on the left-hand side of the photograph taken after the fire, reproduced on this page.

The architect of the building was Lewis Cubitt, who also designed King's Cross terminus for the old Great Northern Railway. He was a younger brother of Thomas Cubitt (1788-1855), the famous developer of Belgravia and other residential areas of London. The engineer for the work was William (afterwards Sir William) Cubitt, engineer to the South-Eastern Railway. The builders of the station were Grissell & Peto, Ltd. Sir William does not appear to have been related to the other Cubitts.

The railway companies in the early years of their development believed in good architecture. There was a deplorable decline during the Victorian period, for which, however, welcome amends were made in the years between the two wars; but at the start they employed in the main first-rate architects—for example, Hardwick at Euston, Tite at Nine Elms, and other men of distinction up and down the country.

Cubitt clearly had the right idea of what a railway terminus should look like. It must be at once dignified and imposing. Bricklayers' Arms was a dramatic piece of work, bearing a certain family resemblance to King's Cross. There was a central tower, for example, and large flanking arches. In the contemporary print by S. Sly, these latter are of uniform size with the central arch, but as carried out they were a good deal larger, as may be seen from the photograph of the station in ruin. Cubitt, though a good classicist, was no pedant; witness the odd-looking bracket-supported canopies to the entrances which, though functional enough, are hardly classical.

A few words about the history of Bricklayers' Arms may be of interest. It was originally opened as a passenger station, but in 1866 it became a goods depot, with occasional use as an excursion station for Kent and Sussex coast resorts. It was the terminus of a branch line built as the result of a quarrel of the Croydon and South-Eastern companies with the Greenwich Railway over a toll of 4½d. which the latter company levied on each passenger. The first-named company said that it killed their traffic altogether. The Greenwich line refused to make any reduction, so the other two companies made a fresh line, 1¾ mile long, starting about a mile from London Bridge to a point adjacent to the Old Kent-road near the "Bricklayers' Arms" public-house, from which the new terminus took its name. The cost was £250,000.

When this branch was opened in May, 1844, half the South-Eastern trains were diverted from the London Bridge terminus. The effect on the Greenwich line may be imagined, and the situation was dealt with by the Greenwich Railway leasing their line to the South-Eastern for 999 years. The South-Eastern Railway accordingly took over the working on January 1, 1845, and the arrangement continued until 1923. From its opening, Dover trains of the South-Eastern Railway ran alternately from Bricklayers' Arms and London Bridge until November 1, 1844, when arrangements were made for conveying passengers to either terminus by all trains at equal fares. The South-Eastern Railway seems to have withdrawn its main line trains from Bricklayers' Arms in October, 1846, although first-class passengers continued to be conveyed by the night goods train until January, 1851.

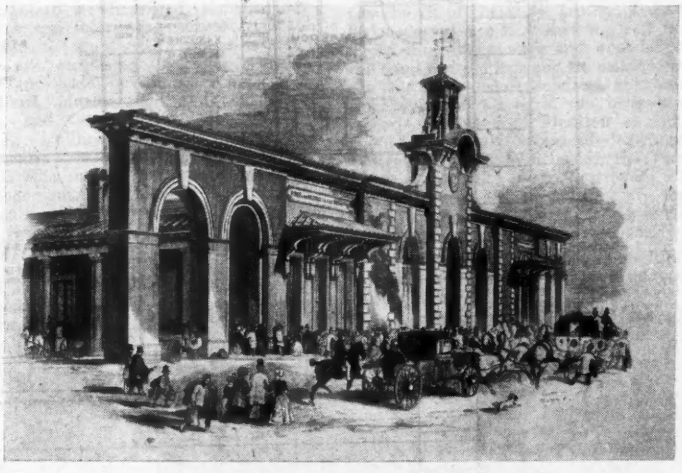
The branch has an important place in the history of signalling. It was here that Mr. (later Sir Charles) Hutton Gregory, in 1843, installed a frame which contained the germ of interlocking. He put up at the junction a shelter in which there were four levers, one each for the London Bridge lines. The chains for the signals were coupled to "stirrups" in a framework, and were pulled to "clear" by the signalman putting his foot in the particular stirrup concerned and pressing it down. The stirrups fouled each other when used, and therefore conflicting signals could not be lowered at the same time.

A great day in the history of the station was the arrival there of Princess Alexandra of Denmark on March 7, 1863, for her marriage with the Prince of Wales. Her Royal Highness arrived at Gravesend by steamer, and travelled by special train to Bricklayers' Arms, whence she drove to Paddington and proceeded by train to Windsor.

In July, 1849, the L.B.S.C. Railway opened Willow Walk Goods Depot, adjoining the Bricklayers' Arms station on the north side. In March, 1932, the stations at Bricklayers' Arms (formerly S.E.R.) and Willow Walk (L.B. and S.C.R.) were amalgamated, the former name being retained.

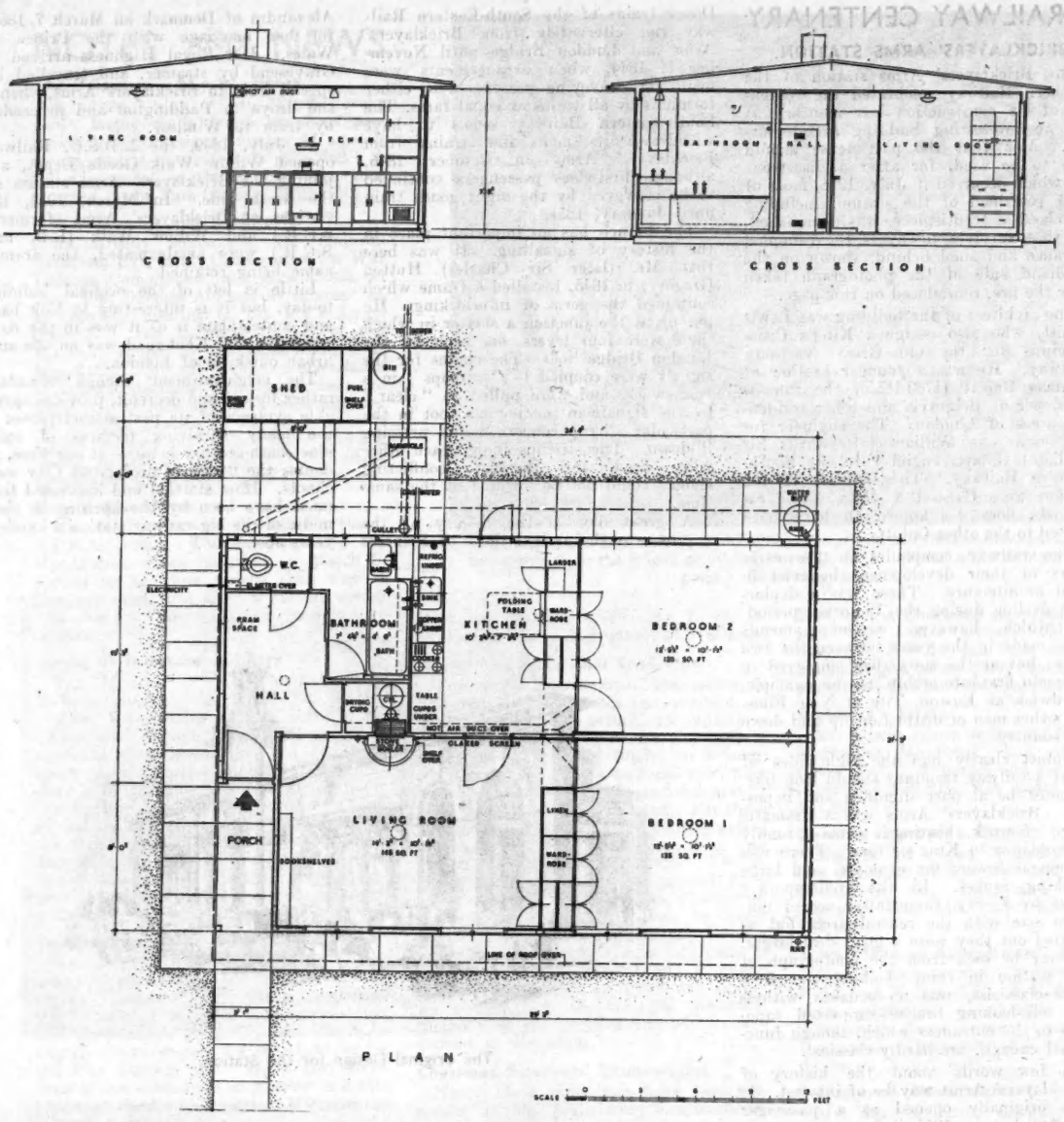
Little is left of the original building to-day, but it is interesting to look back and contemplate it as it was in the days when the Old Kent-road was on the suburban outskirts of London.

The neighbourhood, though nowadays rather forlorn and decrepit, provides agreeable evidence of its past attractiveness in the many surviving terraces of early nineteenth-century houses—at one time, no doubt, the homes of prosperous City merchants. How startled and impressed they must have been by the uprising in their midst of the big railway station a hundred years ago.



The original Design for the Station.

The front of the Station after the fire of 1936.



REVISED DESIGN FOR

THE M.O.W. EMERGENCY FACTORY-MADE HOUSE

A REVISED PLAN HAS BEEN PREPARED FOR THE M.O.W. emergency factory-made house, and a full-scale model has been built in timber inside the Tate Gallery.

ACCOMMODATION: The area of accommodation for the living-room and bedrooms remains the same, but the usable area of the living-room is increased as the stove is now set back in the wall instead of projecting. The kitchen now has the advantage of an additional working area which, in the prototype, formed the passage between the hall through the kitchen to the bedroom and living-room. The bathroom is increased in area behind the lavatory basin. The w.c. has been made larger and screened, and the hall has been increased in area consequent upon the shed being made a detached building outside. The area within the outer walls remains the same, 616 sq. ft.

GENERAL PLANNING: The general planning and disposition of the rooms are approximately the same. Entrance to the living-room is now obtained directly from the hall. The passage door into the kitchen is abolished. A back door is being provided from the kitchen in one unit combined with a window and fanlight over, to enable ventilation to be obtained at any time without having to open the door. The hot cupboard in the hall has been enlarged and will be heated by the hot-water cylinder at the back. The inlet for the fresh air to be warmed and distributed to the bedrooms is now taken from the hall not far from the outer door. The height from the floor to ceiling has been raised by 6 in., making it 7 ft. 6 in.

FEATURES: The cupboard units forming the partitions remain as in the prototype. The kitchen and bathroom unit has been improved by the rearrangement of the entrance from the hall to the living-room, and it is now possible to incorporate the stove, with the hot-water circulating system immediately behind it, as part of the unit. On the kitchen side two extra cupboards are provided with table-top over them. A wash boiler is provided, to which a wringer can be fixed for use in conjunction with the sink. An additional cupboard and towel rail above the refrigerator are also included. A porch has been added outside the front door by continuing the pitch roof to the end, supported by a post on the outer angle. All the rooms are adequately lighted and the opening lights of the windows are handed. Ventilators are provided over each window.

NATIONAL BUILDINGS RECORD

EXHIBITION AT THE NATIONAL GALLERY.

In 1930 a committee was instituted by the Society for the Protection of Ancient Buildings to make an index of architectural graphic records, and they carried out that work until the outbreak of the war. Then a conference was convened by the Royal Institute of British Architects to urge upon the Government the immediate need of a wider organisation to extend the work by including photographs and making a collection of measured drawings, photographs, etc., especially filling up important gaps in such existing collections as those of the V. and A. Museum and the Courtauld Institute. The Government responded with financial assistance and "National Buildings Record" was established with a council presided over by the Master of the Rolls. The present exhibition, which is on view at the National Gallery, illustrates the work of the Council in various directions. It also embodies similar work carried out by the Central Council for the Care of Churches and the Warburg Institute, which work is co-ordinated with that of the N.B.R. Up to now, the last body possess about 2,000 drawings and about 110,000 photographs and have indexed about half-a-million records in various forms.

The first panel of the exhibition illustrates regional variety of materials and methods. This could only be done properly by numerous examples for which there is no space. But the excellent photographs selected serve as suggestions to amateurs and others as to what will be needed in future years as records after our cities have been reconstructed and two or three million houses built in and around our towns and villages. Local characteristics are bound to give way before modern conditions; most of us cannot help regretting this inevitable fact. Panels 2-4 are devoted to churches especially showing how small and simple structures often contain interesting and even unique detail. A beautiful photograph of St. Andrew's Church, Worcester, is very striking, especially to those who know that this church is in the centre of a busy city. The photographer found a position on the river bank which, with the aid of a cleared site in front of the church, enabled him to exhibit the whole of that famous tower and spire from the ground upwards against a clear sky unencumbered with houses or traffic. It is worth noting that this mediæval-looking spire dates only from 1751. A direct view of the apsidal end of Lichfield Cathedral makes one feel that none of our mediæval churches affords a more satisfying east end.

Panel V contains life-size photos of the heads from royal tombs temporarily removed from Westminster Abbey for safety. It may be that many of these early effigies are more conventional than truthful, but the heads of Henry III and Henry VII, with their queens, are full of individual character.

Some Provincial Streets.

After mural monuments we come to illustrations of provincial streets. In the case of Nelson-street, King's Lynn, the whole thoroughfare is illustrated, showing harmonious and interesting houses from the fifteenth to eighteenth centuries. But these are surpassed by the beautiful 1/16th-in. scale drawings of streets in Blandford, Marlborough and Chichester, made and charmingly coloured by A. J. Phillips, A.R.I.B.A. Panel II relates to Georgian interiors of considerable interest, but space permits reference only to Marlborough House, Falmouth, where a classical marble fireplace intrudes itself among the naturalistically drawn and coloured trees of an early eighteenth-century French wallpaper. Panel XIII is mainly occupied by views of terraced houses at Cheltenham and Clifton and detached villas at Tunbridge Wells.

Panel XV refers to industrial towns and includes a c.i. railway viaduct at Newcastle and the unique roof of Leeds Corn Exchange. Panel XVI shows the church of St. Augustine, Ramsgate, which Pugin designed and paid for and became his burial place. There is an interior of "The Grange" adjoining, which he designed and where he spent a few years of his varied life. The interior of St. Chad's, Birmingham, hardly does justice to Pugin's little cathedral, but photos made for recording cannot always be taken from the most attractive positions.

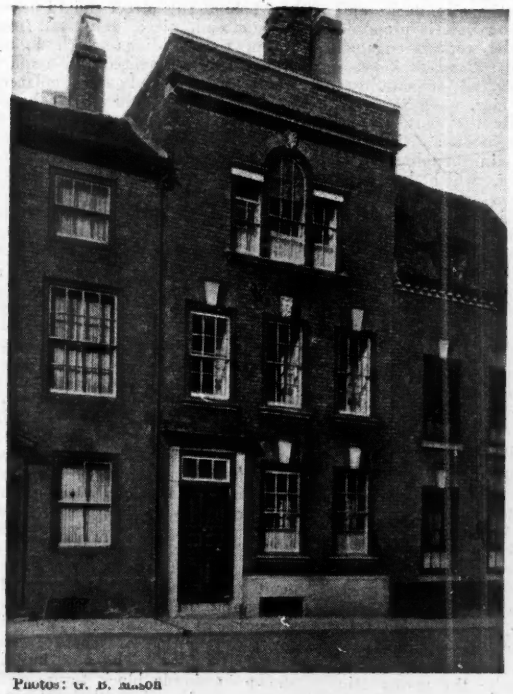
Panel XVII illustrates theatre design from the Theatre Royal, Bristol, with its double rows of columns supporting the galleries, the Criterion with many fewer columns, and His Majesty's with cantilever construction obviating columns. Nash's Haymarket exterior, with its useful and dignified portico, reminds us how few good theatre exteriors we possess.

Panels XVIII-XXII illustrate destroyed or damaged buildings. In some cases they were well recorded, but in the case of Coventry Cathedral we read in the exhibition handbook that the monuments and fittings are better represented than the structure.

In the Second Gallery we can see an example of a complete objective survey of the church of the Holy Trinity, Dartford. By means of a 6-ft. measuring rod introduced into the picture and knowledge of the length of the lens and its distance from the rod and some technical memoranda calculations of all parts can be made as regards dimensions. Mention should be made of carefully measured drawings of Wolvesey Palace, Winchester, the Temple Church, Bristol (now destroyed), and Lowick church. Some of these are reproduced by photostat process which is clear, economical and saves storage space.

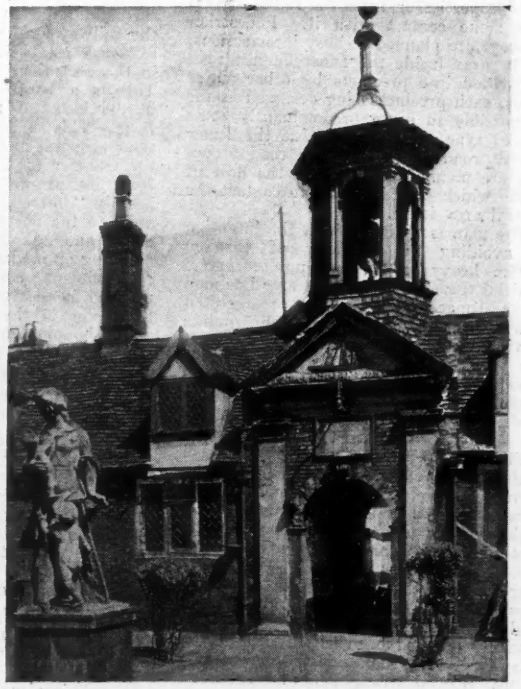
The exhibition is to be closed on July 15. It would be well if it can be displayed in the provinces.

F. Herbert Mansford.



Photos: G. B. Mason

HOUSE IN EDGAR STREET, WORCESTER



THE FISHERMEN'S ALMSHOUSES, GT. YARMOUTH

BRISTOL REPLANNING

SCHEME FOR RECONSTRUCTING CENTRAL AREA OF THE CITY

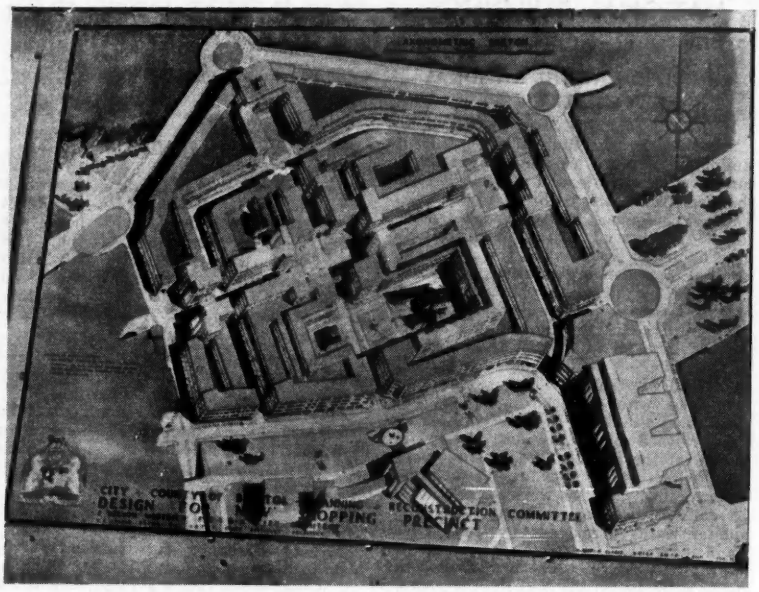
J. NELSON MEREDITH, F.R.I.B.A., CITY ARCHITECT

A REPORT OF PROPOSALS FOR THE planning and reconstruction of the central area of the city of Bristol was recently submitted by the Planning and Reconstruction Committee to an informal meeting of the City Council. The Report, which was accompanied by a large-scale cartoon, included post-war proposals for the redevelopment of 774 acres in the heart of the city which had been badly damaged by enemy action. It has been prepared by the City Architect, Mr. J. Nelson Meredith, F.R.I.B.A.

MAJOR ROAD PROPOSALS.—Accepting the axiom that in an ancient and commercial city such as Bristol, neither amenity nor efficiency could be obtained unless adequate arrangements were made to deal with the control of traffic flow, the main road proposals formed a basic part of the reconstruction scheme. The most important road proposal is the Inner Circuit road (see plan on facing page), intended to complete the road scheme started before the present war and enclosing an area of the heart of the city roughly three-quarters of a mile in diameter. This road is planned with twin carriageway construction, allowing for three lines of traffic in either direction. Very drastic control of access points is proposed either from adjacent properties or from the radial streets that make contact with it. Pedestrian subways are planned at busy intersections.

The area inside the Inner Circuit road is divided into precincts by other major roads, each precinct being designed as far as possible to serve predominantly some special type of user. Outside the Inner Circuit road two other main road proposals are planned to facilitate the flow of traffic which does not need to contact the central area itself.

The plan is designed with the intention of avoiding the necessity of through traffic, heavy traffic, and public service vehicles travelling across the area bounded by the Inner Circuit road. It is suggested that the minimum number of public service vehicles should be routed across the area bounded by the Inner Circuit road, and that by far the largest number shall travel along the Inner Circuit road itself. Within the 774 acres covered by the proposals, it is estimated that car-park facilities for 6,500 cars should be provided —about 2,000 of these to be dealt with by private garage accommodation, and the remaining 4,500 by public car-parks off the highway. A bus station is proposed adjacent to the main shopping centre for the use of the country service buses and the long-distance chars-a-banc services which pass through the city. It is intended to deal with the local services by means of specially planned bus-shelters situated on "lay-by" roads alongside the main traffic routes. Special arrangements are intended to ensure the convenient interchange of traffic between road and rail adjacent to the main railway station at Temple Meads.



DESIGN FOR NEW SHOPPING PRECINCT.

ZONING PROPOSALS.—There are five zones indicated in the proposals based on the precinct principle, with controlled access to the Inner Circuit road and other major roads, as follows: (*a*) *Warehouse and Distributive Trades Zone.*—This zone follows, to a large extent, the pre-war user adjacent to the city docks and the railway station, and provides accommodation for wholesale warehousing and distribution. (*b*) *Industrial Zone.*—This is also adjacent to the docks and railway station, and is a continuation of pre-war user. (*c*) *Residential Zone.*—There is no residential allocation within the area bounded by the Inner Circuit road. To the south of this and adjacent to the city docks and the railway station, however, is proposed a 20-acre estate for key workers engaged in the central area. (*d*) *Business Zone.*—This is a continuation of pre-war user in the heart of the city. (*e*) *Shopping Zone.*—This is possibly the most contentious proposal in the scheme, and involves the transfer of the main shopping centre from its pre-war site, which has been heavily "blitzed," to a new site immediately to the north which is more commodious and allows for more convenient planning on modern lines. It is suggested that cinema establishments should be planned as part of this zone. In addition to this main shopping centre, two other main shopping areas are retained in the scheme.

RESERVATION PROPOSALS.—Apart from the various zones there are also reservation proposals, which cover areas that are intended to be reserved and ultimately acquired for special purposes, as follows:

Municipal Reservation.—A municipal reservation adjacent to the existing new municipal buildings and cathedral for the erection of buildings to accommodate Corporation Departments, central baths, museum and art gallery, headquarters of youth movements, etc.

Public Open-Space Reservations.—The main public open-space reservation takes the place of the old main shopping centre and is right in the heart of the central area. This also permits the preservation of the towers of St. Peter's Church and Mary-le-Port Church, the remains of Bristol Castle and St. Peter's Hospital, and the amenity treatment of part of the water-front of the city docks. It will also throw into relief the site of the old Bristol city wall. Under the open space it is proposed to construct a large car-park with a capacity of 2,000 cars.

University and Voluntary Hospitals.—A further reservation of 60 acres is intended to allow for extensions to Bristol University and the voluntary hospitals, and the erection of a medical school.

King-street Reservation.—King-street, in the heart of the city, already contains many fine buildings showing construction of definite periods, and it is proposed that the whole of this street should be reserved as a museum piece, and that from time to time the buildings which do not conform with its architectural requirements should be removed and replaced with historic buildings which may have to be taken down in other parts of the city.

Central Markets Site Reservation.—The final reservation is for a site for the central wholesale and retail markets, which is allocated adjacent to the Inner Circuit road and at the main railway station.

GENERAL MATTERS.—*District Heating.*—The Committee have considered the possibility of installing a system of district heating in the central area; they have not yet reached a policy decision on this matter, but are awaiting the final report of the Committee sitting at national level to consider this matter.

INDUSTRIAL RESEARCH.—The reactions to a reconstruction plan for the central area of an industrial and commercial city such as Bristol involve very careful consideration at every stage, and in this aspect of planning the Committee have had the support of the Bristol Development Board, who are carrying out research work in collaboration with the City Engineer.

THE SHOPPING PRECINCT.—An illustration on this page shows the proposed treatment for a shopping precinct. The site is of approximately 33 acres, and contains a number of buildings of historic interest, for the retention of most of which the layout provides. The new buildings are shown in simple block form, vistas have been created, and on the east side of the plan a parkway is indicated.

THE TOWN PLANNING INSTITUTE

In a paper entitled "A Factual Basis for Planning," read before the Town Planning Institute on May 25, Mr. W. L. Waide, A.M.T.P.I., said that administrative planning—and he used the word advisedly—demanded more than a constant review of the factors affecting physical planning. It required to have available at any moment all the factors, whether physical, social or economic, both collectively and individually, which were current at the moment, so that the needs and effect of any proposal of whatever nature, were it a new factory or a telephone kiosk, could be assessed. The development of that "needs and effects" service was fundamental to positive planning, because only through such a service could development be correctly directed. It should provide that additional information which would enable an inquiry to be assessed positively and immediately, and upon which the whole development of a town might depend. He had in mind an inquiry which was received by a certain town most anxious to encourage new industries, and one of the conditions was that the area of the site must be free from atmospheric pollution. There was no proof that such an area did exist, and the industry was therefore not satisfied, but if the local authority, as part of their general information service, had kept atmospheric pollution records, they would, no doubt, have been able to meet the principal requirement of a new industry, which they badly needed.

"The science of planning is still very much in its infancy," added the lecturer, "and there is much research work still to be undertaken before we can hope to speak with authority. This work concerns particularly the larger issues of the growth, structure and function of our towns; work which can only be begun after the detailed local surveys are well established. It necessarily follows that if the local surveys are to be of value in this larger field of investigation they must be comparable both as regards factual information and representation, and I sincerely hope that the day is not far distant when the material will be available through the planning information service to enable private or Government research organisations to study these larger issues in exactly the same way as the statistics published by the Minister of Labour, the Registrar-General and the Board of Trade are the foundation of most far-reaching investigations."

He would suggest that one of the fields requiring immediate investigation was that relating to the fundamental structure of communities and the relationship between them, so that we could see in its true perspective the work of detailed planning which each community was, or would be, considering.

In the discussion that followed, Miss J. Tyrwhitt referred to the work of Christaller and Dickinson on the size and spacing of communities in relation to function; this showed the value of such studies to the practical town planner. We were lamentably short of good background material of this sort.

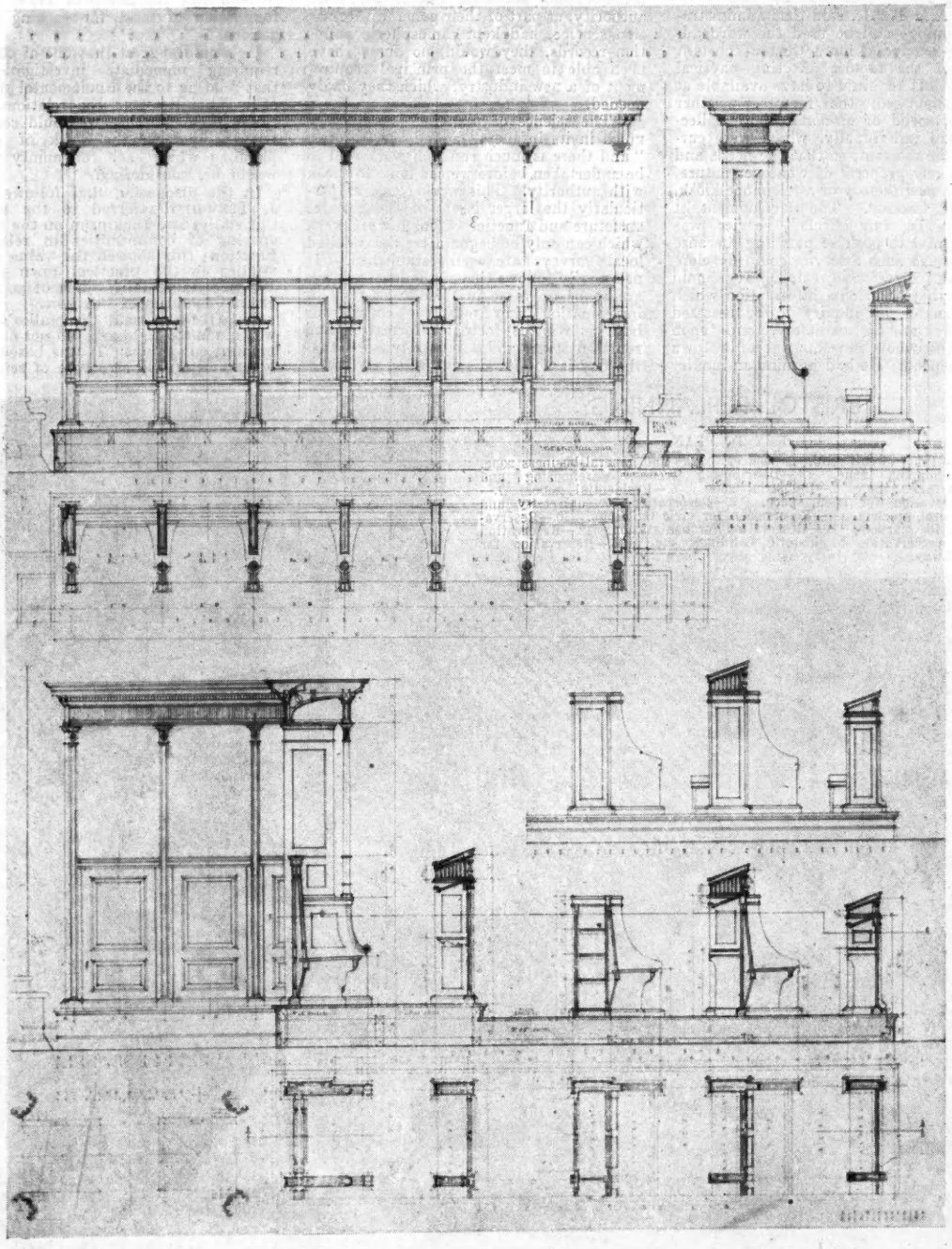
Dr. Gutkind said Christaller's theory was much too rigid and did not fit in with modern conditions. It was based on old ideas and an old structure of settlement.

BRISTOL REPLANNING.

KEY TO PLAN.

1.—Inner circuit road. 2.—Offices, banks and general business zone. 3.—Shopping zone. 4.—Distributing trades, warehousing and wharfage zone. 5.—Industrial zone. 6.—Residential zone. 7.—Reservation for open space. 8.—Reservation for university and hospital precinct. 9.—Reservation for civic buildings. 10.—Reservation for markets. 11.—Reservation for bus station. 12.—Reservation for preservation of historic buildings, etc. 13.—Reservation for parkway.

ARCHITECTURE AT THE ROYAL ACADEMY EXHIBITION



THE CATHEDRAL CHURCH OF YORK.

Proposed New Choir and Canons' Stalls in Nave.

A. E. RICHARDSON, R.A., F.R.I.B.A., ARCHITECT.

PRIME COST AND PROVISIONAL SUMS

By SYDNEY TATCHELL, F.R.I.B.A.

(Chairman of the Joint Contracts Tribunal).

THE recent correspondence in *The Builder* upon "Prime Cost" and "Provisional Sums" shows how little the provisions of the R.I.B.A. 1939 Standard Form of Contract seem to have been understood in many quarters. It is true that these expressions are not defined in that form, but apparently what has not been appreciated by your correspondents is that any attempt to do so was deliberately avoided. The plain fact is that the expressions "Prime Cost," "P.C." and "Provisional Sums" are in practice used indiscriminately to describe those items in the bills of quantities which have been reserved by the architect for special treatment. It was therefore the unanimous opinion of the Joint Contracts Tribunal that if in the Standard Form of Contract they were to describe items included in the bills of quantities for persons to be nominated or selected by the architect to supply and fix materials or to execute work on the site, as, for example, "Provisional Sums," and items in respect of any materials or goods to be fixed by the contractor as "P.C. items," they would be bound to disturb the practice of some persons in the industry.

In the R.I.B.A. 1939 Form of Contract the trouble which would be bound to arise if arbitrary meanings are put to technical phrases, which are by no means generally accepted, has been avoided. It is immaterial in the R.I.B.A. Form whether an item reserved for special treatment by the architect is described as a "Provisional Sum" or a "P.C." item. What is important only is the nature of the treatment which that item is to receive. Thus, where prime cost or provisional sums (regardless of how they happen to be described) are included for persons to be nominated or selected by the architect to supply and fix materials or to execute work on the site, then those items are to be dealt with in accordance with the provisions of clause 21. Similarly, if such items are included in respect of any materials or goods to be fixed by the contractor, then they are to be dealt with in accordance with clause 22.

It is, in short, a question of fact in each case, and under the R.I.B.A. contract there can be no question of a dispute arising because an item which, for instance, should on the face of it be dealt with under clause 22, has had affixed to it a descriptive label which would make the provisions of clause 21 applicable.

It is perhaps surprising that the clarity and simplicity of the 1939 Form of Contract upon this point has not been more fully appreciated. The outbreak of war prevented this form from becoming widely used, and it is to be regretted that in the war-time contracts so many of the old ambiguities and anomalies have been perpetuated. This is only one of a number of new principles which were incorporated in the 1939 form, and it is to be hoped that when the time comes for a general expansion of civil building the excellence of the General Conditions of that form will be more recognised than it appears has been the case up till now.

COMING EVENTS

MONDAY, JUNE 12.

L.M.B.A. Central Area No. 3 Lunch. Address by Mr. H. C. Harland. Holborn Restaurant, W.C. 12.45 p.m.

TUESDAY, JUNE 13.

HOUSING CENTRE. Mr. J. H. McGuinness on "Planning our New Homes." 13, Suffolk-street, S.W.1. 1.15 p.m. (buffet lunch, 12.45 p.m.).

R.I.B.A. Architectural Science Board). Mr. A. M. Chitty, F.R.I.B.A., on "Solution of Social Needs in House Building." 66, Portland-place, W.1. 6 p.m.

SATURDAY, JUNE 17.

ECCLESIOLOGICAL SOCIETY. Mr. W. Godfrey Allen, F.R.I.B.A., on "The Surroundings of St. Paul's—a National War Memorial." At St. Martin's School of Art, W.C.2. 2.30 p.m.

AGRICULTURAL COTTAGES, HAREWOOD, YORKS.

THESE cottages, proposed to be erected at Harewood, will be built of the available old stone and old grey slates from disused or out-of-date buildings in this unspoilt village, and should thus achieve economy as well as harmony with their surroundings—a step most welcome in view of the too frequent use of brick and stucco which has so often marred the quiet charm of the Yorkshire stone-built villages. The accommodation compares favourably with the Ministry of Health's published plan for agricultural dwellings. The architect is Mr. John E. Stocks, F.R.I.B.A. (Messrs. Jones and Stocks).

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

National Savings.

TO THE EDITOR OF *The Builder*.

SIR,—As Chairman of the War Savings Committee of the Building, Civil Engineering and Allied Trades, I want to appeal to all building trade employers to come to the aid of the movement. Some of them already make it part of their daily routine. Whenever they go to a new job they take their savings organisation with them, and it is the pay clerk's job, or part of it, to look after the savings campaign there.

Where that is done the result is success. The weekly percentage saved is up to the highest in industry.

Now what one firm can do, every other firm can. But it depends on you, Mr. Man at the Top! Say the word and your staff will take savings seriously. Forget to say it, and the result is no savings.

The building industry in London has just given a lead to the rest of the country by doubling its target in London's Salute-the-Soldier Week. That was due to energy and enterprise at the top. That was largely the employers' effort, and a notable one it was. I want to see the operatives making their contribution. They will do it, but only if you, the employer, provide them with the right organisation for weekly contributions. What about it, Mr. Building Employer?

GEORGE HICKS, Chairman.

P.S.—Yes, I know about your man-power difficulties. But Mr. X has them, too. If he can do what he is doing, so can you. What about a word to the managing director to-day?—G. H.

Sanctuary Buildings,
Westminster, S.W.1.

"Vacancies for Architects."

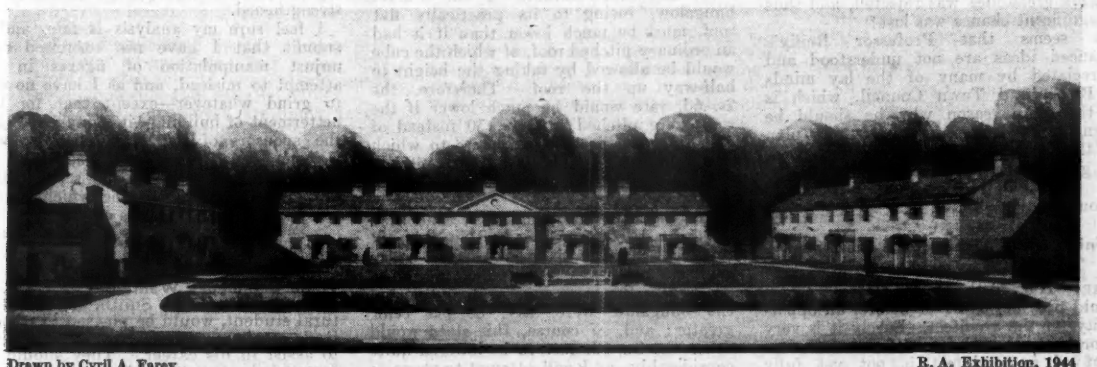
TO THE EDITOR OF *The Builder*.

SIR,—"Official Architect" assumes that (a) membership of a professional body is an essential qualification, and (b) the R.I.B.A. is the only one concerned. Both assumptions ignore the real facts, including the provisions of the Registration Acts, and therefore his letter is hardly worth answering and certainly not worth taking seriously.

May I, however, inquire why the champions of the R.I.B.A. invariably hide their light under anonymity? Possibly they are the Knights of Plutarch's Third Square!

G. B. J. ATHOE,
Secretary, Incorporated Association of Architects and Surveyors.

75, Eaton-place, S.W.1.



Drawn by Cyril A. Farey — R. A. Exhibition, 1944

AGRICULTURAL COTTAGES, HAREWOOD. J. E. STOCKS, F.R.I.B.A. (JONES & STOCKS), ARCHITECT. (See above.)

To the Editor of *The Builder*

Sir,—May I reply to "Official Architect's" letter published in your last issue? I cannot agree with his explanation of the reason for public bodies stipulating that applicants for architectural posts shall be members of a certain Institute. Can this gentleman say that all members of the Institute in question have passed an examination? In fairness, other members of the profession who can produce equal evidence of ability and who may not be members of the R.I.B.A. should have equal opportunity in obtaining these positions. I would suggest that *all applicants must be "Registered Architects"* would be the correct condition and would fulfil one of the reasons for obtaining statutory powers.

I am in doubt whether these public bodies are legally correct in stipulating that applicants for a post must be members of a particular body, especially as there may be local men of equal ability who wish to apply for these positions and are also ratepayers. If this practice is persisted in I would like to see the point tested in law.

A. E. Mander, L.R.I.B.A., F.I.A.A.

New Malden, Surrey.

Birkenhead's Woodchurch Estate.

To the Editor of *The Builder*.

Sir,—It is very regrettable that Party politics should influence in any way the ideals of town planning. If the battle of the plans for the Woodchurch Estate, Birkenhead, is any criterion of the future policy of local authorities relating to the subject, then the outlook for a beautiful post-war England is by no means rosy.

This conflict has arisen from two rival schemes, one prepared some time back by Mr. B. Robinson, the borough surveyor, and the other produced recently by Professor C. H. Reilly, which forms part of his scheme for a new town plan of the town.

As a humble architect it is not in my province to offer any detailed criticism of the two schemes under controversy, except on the broad principles of the issues at stake.

It seems a peculiar procedure on the part of the Birkenhead Town Council, after appointing Professor Reilly—a brilliant authority on architecture and matters relating to civic design—to draw up plans for a future Birkenhead, and then reject the first stage of his scheme, the Woodchurch layout, through political pressure.

A project of such far-reaching importance must surely be conceived unhampered by any political influences. Did not Sir Christopher Wren, after creating that masterly plan for a new London, encounter political domination, with the tragic result that his great idea was rejected, and thus a magnificent chance was lost?

It seems that Professor Reilly's advanced ideas are not understood and appreciated by many of the lay minds on Birkenhead Town Council, which is all the more reason why he should be given a free hand to produce a new plan for the borough for the untold benefit of the generations yet to come.

Gordon Hemm.

Southport.

Unity in the Architectural Profession.

To the Editor of *The Builder*.

Sir,—The forthcoming Reconstruction should provide, as never before, an opportunity for the architect. Surely it is very unfortunate that the need for the employment of an architect is not yet fully realised by the public.

Perhaps an organisation such as that envisaged by Mr. Vincent Burr and his colleague at a recent conference—a National Council which would be representative of the profession as a whole—could be helpful.

No one would deny that the R.I.B.A. has always held the premier position in the architectural hierarchy, nor would its prestige suffer if the R.I.B.A. would recognise that there is a large number of architects who are not amongst its members. Surely the time has now come for the putting away for ever of sectional interests among professional organisations in the interests of the profession as a whole.

A.R.I.B.A.

M.o.W. Factory-made Bungalow: Cost per Foot Cube.

To the Editor of *The Builder*.

Sir,—Statements have recently been made in one of the Sunday papers giving the following information which, owing to the possibility of its misleading persons not expert in estimating, requires attacking with vigour.

The statements, boiled down to hard facts, were :—

(1) That the cost of the M.o.W. emergency factory-made *temporary* bungalow with 620 ft. super floor area works out at 2s. 6d. per foot cube. (2) The cost of a two-storey works-built *permanent* house of 1,020 ft. super works out at 1s. 10d. per foot cube. (3) The M.o.W. bungalow costs £550 and the house £750; and (4) that the £750 house costs one-third more than the £550 bungalow and is two-thirds larger.

The interesting fact about the above figures is that they are substantially correct when viewed from one propaganda aspect, but can be torn to shreds, as I will now try to prove, because they cannot, in my opinion, further the interests of those who are working so hard for the betterment of building. It is the 2s. 6d. and 1s. 10d. which are so apt to mislead, and I will not only show how the 2s. 6d. can be lessened considerably subject to practical comparison, but also that the 1s. 10d. may be increased, thereby approximately balancing the amounts when practical cube estimating, of which I have had much experience, is applied to the subject.

Firstly, it is not correct, without giving information of a vital comparative character, to compare the cubic foot cost of a one-storey bungalow with a two-storey house; nor is it correct to compare the cost per foot cube of a bungalow of about 4,400 feet cube, which is the approximate cube of the M.o.W. bungalow costing £550, with 8,200 feet cube of a house costing £750. The conditions are so entirely different that the information of a vital character to which I refer must be known, and will be obvious by studying the following :—

(a) The cubic contents of the M.o.W. bungalow, owing to its practically flat roof, must be much lower than if it had an ordinary pitched roof, of which the cube would be allowed by taking the height to half-way up the roof. Therefore, the 2s. 6d. rate would be much lower if the roof were pitched at, say, 30 instead of 6½ degrees, as it is. The house to which I have referred could have a flat or pitched roof, which would govern the rate of 1s. 10d. foot cube.

(b) The M.o.W. bungalow is condensed in about 4,400 ft. cube, and in this are provided a really excellent lot of costly equipment, fittings, etc., which would be practically the same in extent and cost if the bungalow were, say, 50 per cent. greater; and, of course, this state would cause the 2s. 6d. rate to be lowered quite considerably, as I will attempt to prove.

(c) It will be reasonable to assume that half of the cost of £550—viz., £275—is absorbed in those items which are practically constant to the small bungalow and also to the larger house; those items are—the kitchen, bathroom and w.c. equipment, the cupboards and cabinets of a furnishing character, all the services, boiler, cold-water cistern, hot-water tank, stove, immersion heater, and to within a reasonable limit the windows and doors, and other items. Manifestly, if all these are worth £275 they represent 1s. 3d. of the 2s. 6d. foot cube, and valuable data is at hand to enable a just comparison to be made of the comparative costs per cubic foot, and they are as follows :—

(d) Increase the cubic contents of 4,400 by 50 per cent. up to 6,600. Therefore—

2,200 feet cube at 1s. 3d.	£137 10 0
Add...	550 0 0
	£687 10 0

$$\frac{£687\ 10\ 0}{6{,}600} = 2s.\ 1d.\ \text{foot cube.}$$

(e) Now I will show how floor areas and cubic contents require analysing to provide fair comparisons between a small bungalow of 620 ft. super floor area and a larger house of 1,020 ft. super. If the bungalow is increased in cube 50 per cent., let it be assumed that the height of it is the same—it will vary just a little—so therefore the fair area may be allowed as increased 50 per cent. up to *930 ft. super*. The house of 1,020 ft. super contains stairs which are, of course, quite useless in bungalows, and they really must be allowed in any comparison between a bungalow and a house. On the ground and first storeys the stairs will take up about 70 ft. super of floor area, thereby reducing the comparative area of 1,020 to 950 super feet, which, note particularly, is very near to the 930 stated above. Now some very interesting general figures can be given :—

(f) The 1s. 10d. foot cube per 1,020 super feet should for purposes of comparison be *increased*, because—

$$\frac{1s.\ 10d. \times 1{,}020}{950} = \text{say } 1s.\ 11\tfrac{1}{2}d.,$$

which is comparable with 2s. 1d. previously stated. Apart from 1s. 11½d. and 2s. 1d. being quite different from 1s. 10d. and 2s. 6d., there is another important factor which emerges from these figures, viz. : For £687 10s. a bungalow of 930 ft. super floor area can be provided, as against a cost of £750 for a house having a floor area of 950 super feet, or even 1,020 super feet. The terms *temporary* and *permanent* applied to the two factory-made structures can mislead unless the longevous-values are known. I am convinced that the M.o.W. structure will have a much greater life than 10 years, especially if certain parts are slightly strengthened.

I feel sure my analysis is fair, and I submit that I have not exercised any unjust manipulation of figures in an attempt to mislead, and as I have no axe to grind whatever—except that for the betterment of building—it is my hope that the sponsors of the steel bungalow will welcome this contribution as only an earnest of my desire to be scrupulously fair and to attack anything which is contrary to the best interests of building.

R. V. Boughton.

Streatham, S.W.16.

Trade Catalogues Wanted.

Mr. W. N. Gould Smith, an architectural student, would be pleased to receive trade catalogues, directories or pamphlets to assist in his career. They should be forwarded to "Lyndhurst," Francis Green-lane, Penkridge, Staffs.

"SANITATION IN POST-WAR BUILDING"

MR. MANZONI'S ADDRESS TO ROYAL SANITARY INSTITUTE.

An address to the Royal Sanitary Institute was given on May 23, by Mr. Herbert J. Manzoni, C.B.E., M.Inst. C.E. (Fellow), City Engineer and Surveyor, Birmingham. Mr. Manzoni said:—

The word sanitation, deriving from sano, must be allowed to encompass much more in a building, whether it be domestic or industrial, than the drainage, the plumbing and the ventilation. In the pursuit of healthy and comfortable conditions for living and working, proper attention to these matters is very important, but it should be easy to build a dwelling wherein all three are as nearly perfect as possible, but which nevertheless would be a most unhealthy and uncomfortable place.

Only in recent years has science called attention to the effect upon the health of human beings of light and noise, but there are other factors, the effects of which are just as important but very little understood or considered—atmospheric pollution, the regulation of warmth, fatigue due to bad arrangement, colour and a factor which I hardly dare to mention, so little is it understood—the inter-relation between the human being and the mass of his surroundings.

To deal adequately with all these subjects would require much space and more knowledge than is usually possessed by any working man in these busy times, but the vast programme of building envisaged for the immediate post-war years makes it imperative to review such of them as are fundamental and about which we have a wealth of data. To this end study committees have been working under the ægis of various Government Departments during the past year or two and some most interesting reports are about to be published on plumbing, acoustics, lighting—to mention three subjects referred to above.

These reports should contain the accumulated experience of some of the most knowledgeable specialists in these matters, and consequently it would be somewhat presumptive to do more than touch upon modern trends or call attention to obvious current defects.

Drainage.

Drainage in its modern form is to some extent an expedient; in a perfect economy we should utilise for our needs so much of the pure water which would fall from the skies upon us, returning the surplus, also pure, to the earth and to the streams. In fact, the water which falls upon us is polluted by an atmosphere which we have fouled; it becomes further polluted by man's handiwork upon which it falls and so we foul it still further by using it to flush our sewers and send it away to be cleansed in due course by a variety of natural processes which are becoming more and more overworked.

At the same time we pay a heavy price to pump or gravitate other water, often from a distance, to supply our needs, both domestic and industrial.

Our needs, moreover, are much heavier than they need be and are becoming more and more extravagant; already in our large towns our use of water extends to 40 gallons per head per day and in America the use commonly reaches double this quantity. More than half of this amount is used solely as a carrier for industrial and waste products.

Until science devises the means of utilising or neutralising all waste products on the spot and until we have a pure atmosphere in urban areas the expedient of foul drainage will remain with us.

It is doubtful whether any revolutionary improvements are likely in drainage methods—the efficiency of present methods is the result of many years of good practice and in the majority of cases the waterborne elimination of waste is sanitary and satisfactory and site drainage in towns is well understood and practised.

The one-pipe system of drainage, with or without venting, has had some publicity in recent years, but it is merely a variant on the more commonly used two-pipe system and is reasonably well understood by specialists.

The difficulties met with in the one-pipe system of drainage usually arise out of the syphoning of traps and for that reason it is considered necessary in this country to provide anti-syphonage pipes to the traps of all fitments, and this, of course, leads to a considerable increase of pipe work and a consequent increase of cost. It has been shown in innumerable instances that anti-syphonage can be dispensed with, but the exact conditions under which this applies are not very fully understood although American research has done something to dispel the mystery.

In certain American towns and on the Continent the one-pipe system is fairly common, and with the simple arrangements found in an ordinary domestic building there is comparatively little danger in omitting anti-syphonage pipes provided the sizes of waste pipes are adequate and their junctions with the down pipe are carefully spaced. The possibility remains, however, that syphonage may take place under certain circumstances and that there will be a consequent free passage for drain air into the house; it is doubtful also whether any worthwhile saving of cost is achieved by the application of the one-pipe system to dwelling-houses, whereas with large and tall buildings, such as hotels and blocks of flats, there is a definite economy in applying it even with the additional provision of an anti-syphonage system.

It has been said that the use of traps on the drainage system before entry to the sewer would eliminate the dangers and unpleasantness of the syphoning of traps within the building, but this is probably incorrect because there is usually little difference between the air in drains and the air in sewers, the former often being the more foul.

Disposal of Refuse.

In recent years the Garchey system of waterborne disposal of solid refuse from houses has been tried in this country, but it results in an extra cost, it adds a further use of water in considerable quantities, and it is very doubtful whether any considerable spread of the system is likely. The trial plant was built in connection with the Quarry Hill Flats in Leeds, where other rather unorthodox methods of building were incorporated, and there is no doubt that the result of this very bold experiment is good and reflects great credit upon the authority and their responsible officers.

The Garchey plant embodies a large sink in each flat, down which solid refuse contained in paper wrapping is swelled with water, and it passes down large diameter pipes into an underground sump. This sump is a collecting receptacle for a large number of dwellings, and from these the refuse is drawn by suction into an incinerator, de-watered and burnt, and at Leeds the heat generated is used to supply hot water and steam for a communal laundry. It would appear that combined with a comprehensive scheme of high density flat building it has certain advantages, but it seems extremely difficult to apply it to low density building or to the varied types of buildings in any ordinary urban development and, consequently, it cannot be looked upon as a method which will eventually supersede present practice.

Disposal of refuse by the street-to-street emptying of bins, and the present method of central incineration cannot be considered ideal; it has many serious drawbacks, dust and dirt, high cost, and a considerable amount of rather objectionable labour are amongst them. An ideal system would be some form of simple decomposition on the site and eventual disposal via the drains, but the nature of commercial and domestic solid refuse is such that this would probably be a complicated chemical process. The use of household incinerators is quite feasible, but this still leaves the problem of disposal of ashes and involves a certain amount of additional domestic labour, which, in these times, cannot be considered desirable.

Plumbing.

Plumbing practice also has reached a high degree of efficiency in all highly civilised countries, but unlike drainage the standard of plumbing varies greatly in individual buildings.

Perhaps the commonest defects in plumbing are noise of operation and lack of protection against the effects of frost. Lack of knowledge on the part of individual builders and the urge of economy are responsible in both cases—and more silent fittings are available but usually cost more, and much can be done to prevent freezing by the elimination of draughts and the insulation of piping from external walls. Nothing can be done to prevent freezing if the whole system is left in an unheated building during frosty weather except the complete emptying of all tanks and pipes, and there is a great need to provide adequate facilities to this end and to educate the public accordingly.

There is also a need to require by regulation a good standard of plumbing in all new buildings, and thus prevent a repetition of the poor and shoddy work from which we are suffering to-day.

Under this heading it is, perhaps, convenient to mention water supply—so adequate in most large towns, but so very inadequate in many country districts. The recent discussions in Parliament on this subject are well known and have brought out the necessity of national organisation of the supply of water.

It is probable that the reason the health of persons living in the country is little better, and in some cases definitely worse, than that of townspeople is in a large measure owing to the impurities in many of the local sources of water. It is quite common to find at isolated farms, and even in rural villages, shallow wells in very close proximity to leaking dumbwells, a condition which is not only likely to result in widespread infection but must contribute to a general low standard of health. The difficulty is that the cost of providing pipe water supplies to isolated farms and communities is very high, but the sources of water in the country are certainly adequate, and it is probable that a national control would result in a much better distribution.

Ventilation.

In the case of ventilation we are dealing with a subject which is imperfectly understood, and until recently seldom attempted—the difficulty is that human beings require warmth as well as fresh air, and the attainment of both at the same time is often impossible in the types of buildings we use.

In modern factories, public halls, cinemas or places designed for many people, expensive mechanical devices are now quite common, but apart from certain byelaws concerning ventilators in rooms without flues and regulations governing space about buildings our dwelling houses have to rely on draughts for change of air. The open fire, coupled with ill-fitting doors, is the best ventilator we have been able to devise, and,

in consequence, the efficiency of the fire as a heating agent is of the order of 20 per cent. The result is that in order to retain, in cold weather, the heat generated by the fire it is usual for all windows to be closed, and so far as possible all draughts prevented by padding round door frames; fresh air is thus precluded and the atmosphere in the room becomes vitiated, whereas an ideal arrangement would allow for a complete change of the atmosphere in any occupied room at least twice and preferably more times every hour.

Possibly the development of simple air conditioning plants will solve this problem for us in the future—it is not sufficient in many cases simply to draw in large quantities of air from the street because in many industrial districts this means adding yet another pollution to the purely domestic ones existing in the home. The problem resolves itself into providing a continuous supply of small quantities of purified air and the occasional extraction of specific pollutions produced by cooking, etc. Mechanically, this is simple, and there is no reason why it should be unduly expensive.

Lighting.

There is no generally recognised standard of lighting, either artificial or natural—artificial lighting can never in practice approach the standard of daylight, but its intensity for comfort depends very much upon human likes and dislikes. With modern fittings it is comparatively easy to substitute a 100-watt bulb for one of 60-watts, but it is not so easy to place the light in the best position according to the work in hand. More thought should be given to the placing of lighting points in buildings—the aim should be to eliminate glare, to prevent shadow in positions where good light is required and to avoid "flatness" by well-designed fittings or shades.

Daylight, and particularly sunlight, require a somewhat different approach—the aim should be to let as much as possible of both into all rooms. Both are health-giving, and particularly sunlight. Much can be done by arranging buildings so that living rooms or workrooms have their windows so placed that they catch the sunlight during the maximum period, and an absence of opposing buildings on the opposite side of a narrow street is an obvious advantage. In practice this is achieved by a general orientation of buildings to face approximately east and west and usually this is comparatively simple when laying out new estates, but as practically no attention to this point has been embodied in the street layout of most of our towns, this desirable factor can only be introduced if comprehensive rebuilding is undertaken. A recent analysis of this subject has suggested that it is desirable to avoid the layout of tall buildings in opposing blocks, and it is shown that a cruciform arrangement is the most desirable, although the internal planning has to be very carefully thought out to allow the maximum of sunlight to enter living rooms.

There are statutory standards of window area in any particular room, but the shape of windows is even more important—a horizontal low window is not nearly so effective as a high vertical one; the windows found in old Georgian houses are excellent in this respect, allowing a maximum penetration of the direct rays from the sky into the rooms.

Noise.

The effect of noise upon the nervous system is probably a controversial matter as a pure scientific study; it is doubtful whether dwellers in noisy streets really hear the sounds of traffic unless they concentrate upon them, but there can be no doubt whatever that the altercation next door or even the wireless across the road are as immediately audible as the sound of many rushing waters and far more irritating. It is always the unwanted noise which we hear and that usually emanates from our neighbour's house, whether through a party wall or from the flat above or below.

It is doubtful whether street noises can be effectively eliminated because the sound waves reach us in our homes mainly through the window spaces, and the cost of insulation would be considerable, involving double windows with an intervening air space. Insulation of party walls, however, and of floors is now comparatively simple, the former by the introduction of effective cavity and the latter partly by a process known as floating, that is by introducing an insulating material, such as glass silk, under the bearing surfaces, and partly by reducing contact noises through the floor itself. This is achieved by the use of materials with a low factor of conductivity or again by introducing a cavity which is usually packed with materials such as glass silk, asbestos wool, aluminium foil, etc. These methods are simple and fairly effective; moreover they are not unduly expensive and should become common practice.

Whilst dealing with the subject of noise it is well to bear in mind the necessity of a measure of sound absorption in the materials of which the inner linings of rooms are composed. This function is adequately performed by plaster and wallpaper, linoleum and carpet, but there is a danger that the endeavours to use new materials adaptable to prefabrication may rob us of these well-tried securities.

Atmospheric Pollution.

The increasing use of gas and electricity for power and a much more stringent control over the production of industrial smoke (the war period excluded) have resulted in recent years in a great diminution in atmospheric pollution in our towns and cities, but we have now arrived at a stage where the domestic fire is said to be responsible for more than half the evil still remaining.

The open fire, with its comfortable and cheery appearance, is part of the high standard of living of the people of this country—we have been able to afford it because of our vast resources of coal; I believe that any attempt to eliminate the open fire would fail from popular resentment.

The introduction of central heating, whether by district or by individual buildings, would, of course, reduce considerably the amount of solid fuel used in open fires and consequently the amount of pollution caused from this source, but it is possible also to achieve an almost complete absence of pollution by designing open fires to burn smokeless fuel and it is probable that the economic need to make the most of our coal by gasification will give a lead in this direction.

A considerable amount of experiment has been undertaken recently in the production of a suitable coke-burning grate. The difficulty is that a fairly deep fuel bed is required and in the ordinary way replenishment with small quantities of fuel must be almost continuous, *i.e.*, say, at hourly intervals. The lighting of coke fires is also difficult but can be solved with the subsidiary use of gas. Refueling has to some extent been overcome by an arrangement which provides a hopper feed, and a grate has been constructed which, when the dampers are closed, will burn for six or eight hours with a single application of fuel. It is comparatively easy to overcome this problem by using a closed stove, but the people in this country would certainly object to a change-over in this direction.

When the first office building on the new Civic Centre at Birmingham was constructed immediately prior to the war, an air-conditioning plant was installed—the air drawn from roof level and passed through oil filters, pre-heaters and water spray. Despite the action of the filters the water becomes distinctly acid in character—sufficiently so to cause corrosion of ordinary ferrous metals.

The importance of open spaces, and particularly of trees and grass, on an adequate scale in built-up areas should not be overlooked in their influence on the purification of a polluted atmosphere.

Regulation of Warmth.

Mention has been made of the low efficiency of the open fire as a heating medium; much of the heat generated passes quickly up the flue which itself is composed, advisedly, of a material having a poor factor of heat conductivity.

Research has been proceeding for some time into methods of using this heat and a form of flue has been tried out which is surrounded by an air chamber whence the warmed air is directed back again into the rooms. The method is simple but has certain experimental faults yet to be overcome. If possible, the air should be taken from outside the building, but this necessitates a fairly high efficiency of heating, otherwise it will not contribute much to the warmth of rooms, whereas taking the air from within the house does not achieve any additional freshening of the general atmosphere. A further difficulty is the danger which might occur from cracked flues, especially where coke is used as a fuel. Under most conditions, of course, the flue draught would ensure that coke fumes were not drawn into a room, but the danger exists should there be any blockage of the flue or a condition of down draught.

District heating also is being studied, but as yet there is little hope that its benefits can be economically applied to low density dwelling-house development.

The provision of a constant temperature in all parts of a dwelling is by no means favoured by all people, and it would be interesting to have an authoritative statement based on scientific fact rather than mere opinion.

It is well known that plants grown under glass in a condition of constant heat have to be very carefully hardened off before they are planted outside, and the same may apply in varying degree to human beings. Is it not reasonable to suppose that the reaction of the human body to quite considerable changes of temperature has a stimulating effect rather than the reverse?

Fatigue.

The arrangement of comfort in a home is very much a matter of personal taste, but few women arrange the fitments in the workshop of the house—the kitchen;

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they usually have to put up with the mess the unthinking architect or builder has left for them. In America this subject has been studied extensively, but not so in this country. In the large cities of America the orderly arrangement of home fitments and utensils has, doubtless, been brought to prominence by the much more prevalent practice of living in apartment blocks and to some extent by the difficulties of obtaining domestic help; it is usual to combine living-room and kitchen in one room or at least kitchen and dining recess. The immediate reaction to this arrangement amongst people of quite good income standards has fostered the study of labour-saving devices of all kinds, of the most advantageous arrangement of working plant, sink, cooker, cupboards, draining boards, work tables, and of the careful design of all these so that they present a clean, tidy and cheerful appearance.

The total amount of physical effort expended in a day by a woman in performing ordinary domestic duties in an old and badly arranged house must be many times that required to accomplish similar tasks in a well-arranged home.

Inevitably this must lead to fatigue, irritation and consequent impairment of health and at the same time it curtails the time available for recuperative leisure.

We have recently been promised a general issue of refrigerators, and although it is well known that in certain countries the use of refrigeration is not only desirable but necessary it is extremely doubtful whether the lack of refrigerators has been at all harmful in the temperate and even climate of Great Britain. From experience of the use of a refrigerator over a considerable number of years I am quite certain that except on a few days during a hot summer it may as well not be there.

Colour.

On the subject of colour it is much more difficult to particularise. Most people have an instinctive preference for bright as against sombre decorations—greens are usually considered to be more restful than reds, and dark oak panelling is, undoubtedly, more comfortable than, for example, white tiles, however perfectly these latter might fit the mood of cleanliness usually associated with bathrooms.

It is probable that texture has something to do with human reactions to decoration and so, undoubtedly, do individual tastes and moods, but whilst some people are more sensitive than others to colour there are probably broad generalisations which could be ascertained by research and which may help, if properly understood, to a better standard of health and comfort.

The colour blue is often associated with boredom and has become the theme of a whole range of characteristic songs; grey also is bleak in the extreme, ghosts also are associated with this colour; modern airmen speak of being browned-off; whereas red, especially dark red, has an unhappy association with crime, particularly murders.

The Effect of Mass.

Lastly, and with great hesitance, the effect of mass upon the delicate receptive mechanism of man. It may be that this factor is not worth consideration—neither were vitamins nor atoms a generation or two ago—neither, in fact, is anything about which we know next to nothing, but when scientific progress brings them to light we find them to have been the principal cause of phenomena which seemed unexplainable.

There is a psychological condition called claustrophobia, which has been shown to be not entirely composed of imagination, and there are other unexplained phenomena which may be related to emanation, to gravitational attraction or to period of vibration.

It is possible in theory to build a house with a fraction of the mass of 9-in. brickwork and which in respect of thermal and acoustic insulation and weatherproof qualities is more or less perfect, but would it be comfortable to western standards—would it provide that element of restfulness to which we have been accustomed? It is said that the Japanese live in houses with walls of matting or paper—at least this practice has not made them peaceful.

I cannot explain the reactions of human beings to the mass of their surroundings, but I have often thought that I personally am sensitive in this respect—to what extent and why I cannot say, but I believe this to be a factor which may well be decisive in any projected and fundamental change in our methods of building.

The "Churchill" House and A.B.T.

THE Association of Building Technicians have submitted to the Minister of Health a 5,000-word report giving their opinion, as building experts, on the "Churchill" House. They congratulate the Government on their decision to listen to and act on the opinions of housewives and others. They state their belief that the acute housing shortage justifies the erection of temporary prefabricated dwellings. They add, however: "The house as planned would definitely discourage people from having children. One cannot say that there is enough room for a family of four." For this reason "no one should be allowed to occupy the house for more than, say, two years, and a plan must be developed for a temporary three-bedroom house with a larger living-room, kitchen, etc." Copies may be obtained from 5, Ashley-place, S.W.1, price 7d. post free.

Fuel Economy Memoranda.

The Ministry of Fuel and Power have recently circulated to local authorities. hospitals and similar institutions memoranda dealing with the following aspects of fuel economy:—

By local authorities (P3/11).

In hospitals and institutions (P3/12).

In public baths and washhouses (P3/13). Copies can be obtained free of charge from the Ministry of Fuel and Power, 2, Little Smith-st., London, S.W.1.

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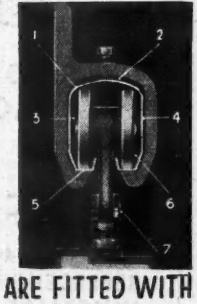

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BUILDING TECHNICIANS' CHARTER

THE Association of Building Technicians have issued "The Building Technicians' Charter"*—in which their claim to better working conditions and salaries and to greater responsibility for technicians is set out. Following is the text:—

Houses, schools, hospitals, factories, roads, docks and airports—the efficiency of all these depends on building technicians. Designing, calculating, organising, we can translate labour power and skill and materials into healthy workshops, homes where families can be happy, and communities where social life can flourish.

We shall not be satisfied until Britain's legacy of sprawling industry, traffic muddle, benighted villages, and overcrowded slum-ridden towns, is only a memory.

To carry out this work well, building technicians must secure better salaries and working conditions, and at the same time a greater share of responsibility. This Charter sets out a programme of demands that can be won by a determined struggle and the use of all the advantages the trade union movement has gained in recent years. The programme falls into five main sections.

I.—Planning.

Trained to planning in individual jobs, we stand for the planning of the whole of Building within the framework of a National Plan for industry, transport, and the location of new towns. Local authorities and private interests of all kinds need guidance and must be subordinated to this National Plan if new schemes are to serve the public well-being.

There must be immediate measures to control land values and development, pending the achievement of public ownership.

The choice is between a chaotic struggle of sectional interests and an ordered and united effort to build a finer Britain.

II.—Job and Office Organisation.

Technicians' abilities must be properly used. We believe the following measures are necessary for this.

TECHNICAL CONTROL.—Too often the work of competent technicians is thwarted by bureaucratic interference. Those trained for technical work must be given the authority due to their experience and training.

JOINT PRODUCTION COMMITTEES.—These Committees will be as important for the needs of reconstruction as they are for speeding up output in wartime. There should be Government direction to ensure the establishment of these Committees on all large contracts and the inclusion of technicians on the employees' side.

GROUP WORKING.—In all offices technicians must be given opportunities for an intelligent understanding of the whole of the job on which they are engaged. This can often be achieved by group working of all grades and classes of specialists—architects, engineers, surveyors, as needed—each Group being responsible for a single job from start to finish. Whatever system prevails, all technicians must be given opportunities for site visits, and continual employment on dead-end tasks is to be avoided.

TIME AND PROGRESS SCHEDULES.—An organised building programme is impossible without the preparation of time and progress schedules for all large jobs. We stand for scientific planning and business-like realisation of the plans. Technicians have the responsibility of perfecting

*Issued from 5, Ashley-place, London, S.W.1

methods of Scheduling and of keeping a constant check on the attainment of the targets laid down.

III.—Education.

The system of technical education must be radically improved. Higher standards must be required of teachers, with more attention both to the results of scientific research and the gaining of practical experience on the job. The neglect of the economic and social aspects of building and planning should be ended.

Building technicians should have a common basic training and learn from the beginning to work together.

Junior employees must be given every facility—including time off—for study. We oppose the system of premiums and articled pupilage.

Many more scholarships must be made available, with equality of opportunity for all. There must be special facilities for building apprentices wishing to train as technicians. The National Building Certificate courses should be recognised as steps towards qualification for the professional institutes. For trained men refresher courses and post-graduate training schemes must be organised on a much wider scale through the technical schools, colleges and universities.

IV.—Demobilisation and Re-employment.

We place the highest importance on ensuring the happy return and fair treatment of those of our fellow-technicians who have played their part in the war in such an effective manner in the Services.

We suggest that there are building technicians whose early demobilisation (irrespective of length of service) would bring more benefit to the mass of service men and women—in the form of a better and quicker rebuilding of Britain—than any rigid adherence to a "first in, first out" or similar scheme.

Refresher courses must give priority to demobilised men and women, and there must be adequate grants to remove any financial obstacle. The Government scheme for Further Training must be interpreted in a spirit of generosity.

V.—Working Conditions and Salaries.

Salaries and conditions of building technicians are at present dependent on bargaining by individuals, except where collective agreements exist. The Association aims to establish national agreements where employees are nationally organised as well as further local agreements. The long-term aims (as summarised) are :—

(1) Minimum basic salaries for all building technicians.
(2) Equal pay for men and women for equal work.
(3) Overtime pay for all.
(4) A five-day working week.

The following is a programme for immediate action :—

HOURS.—All technical staff to work fixed hours and not to be "on demand." Maximum for office staffs, 38.

OVERTIME RATES.—All time worked in excess of basic hours to be paid at the rates laid down in the National Working Rule Agreement for operatives.

TRAVELLING TIME.—For travelling time outside normal working hours required by the employer, other than normal travel between home and job, to be paid at overtime rates.

SUBSISTENCE.—Without prejudice to any existing rates, £2 per week for any employee working away from home.

HOLIDAYS.—One day per month of service for the first 12 months, thereafter two full weeks plus Saturday before and the Monday after until five years' service has been completed, when annual holidays should be increased by one week. All Bank Holidays, including in each case the Saturday before—i.e., Easter, Whitsun, August Bank Holiday, Christmas (in England and Wales), and the first working day of the year (in Scotland).

LOCAL AUTHORITY STAFF.—Certain variations are put forward for staff of Local Authorities.

SALARIES.—Temporary staffs to be placed on salary scales.

CONDITIONS AND OVERTIME.—Whitley Council conditions to be applied where they are not in operation. Building technicians to be placed in the Whitley Scales in accordance with their specialised training and qualifications, so that their conditions are equal to those of technicians in other employment. All temporary staff to be placed on the permanent staff after two years' service.

JOINERY MANUFACTURERS' REPORT

THE current report of the English Joinery Manufacturers' Association, 40, Piccadilly, W.1, indicates that this body made continued progress during the year under review. Nineteen firms have been added, a total of 117. A main work has been the standardisation of wood casement windows, with a saving of approximately 30 per cent. in timber and a reduction in the number of types to six. These windows have been referred to the B.S. Institution to become a British Standard, a sample window has been installed in the County Hall, and M.O.W. have decided to instal 50 per cent. or wooden windows in the Demonstration Houses which they are erecting. There has also been much collaboration with other allied associations, and with the Directorate of Woodworking, and an interesting development has been the establishment by all interested parties, at the suggestion of the President of the Board of Trade, of a Committee on the problems of the joinery trade in the period of reconstruction; the Association is represented on this Committee. The Association has also been responsible for setting up the English Joinery Manufacturers' Federation to deal with questions of wages and conditions of labour.

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ADVANCE PREPARATION OF HOUSING SITES

N.F.B.T.E. PROTEST TO LORD WOOLTON.

THE following letter has been sent by Mr. J. G. Gray, President, National Federation of Building Trades Employers, to Lord Woolton, Minister of Reconstruction :—

DEAR LORD WOOLTON,—Unwilling as we are to take any action which may deflect the attention of the Government from the prosecution of the war, nevertheless as representing one of the largest industries in the country we feel so strongly that a fundamental mistake is being made in regard to post-war housing policy that we have caused to be addressed to every Member of Parliament a letter in the terms of that enclosed herewith. Somewhat similar communications have been sent to the clerk to every Local Authority and all Ratepayers' Associations.

We are particularly concerned because the proposals : (i) place certain contractors in a privileged position; (ii) reverse the previous Government policy of spreading building and civil engineering work amongst the largest number of contractors; and (iii) by withholding W.B.A. priority from contracts for this work other than group contracts interfere with the right of a Local Authority to conduct its affairs in the manner it thinks best. If this policy is pursued there is a definite risk of eliminating the smaller trader.

We are informed that the decision to group Local Authorities for the purpose of having the necessary work comprised in the advance preparation of housing sites undertaken has been taken at Cabinet level. We ask that the decision should be modified and Local Authorities empowered to make their own arrangements for having the works carried out in the normal way. Our reasons for making this request are set forth in the statement attached to the enclosed letter.

These proposals have raised an unprecedented storm of protest not only in our National Council but in every Region and in every Local Association throughout the country. I am supported in making this protest by a mandate from the whole membership of the Federation.

If it is desired to discuss this matter with a deputation from the Federation I shall be pleased to arrange for such a deputation to wait upon you at any time. Whether this should be considered necessary or not I trust, Sir, that you will cause inquiries to be made into this matter in order that the full assistance that the building industry is capable of rendering may be placed at the disposal of the Government and of the Local Authorities in the large and important task of housing the people.

The Statement.

Following is a copy of the statement referred to :

It is the considered opinion of the National Federation of Building Trades Employers that the proposals for the advance preparation of housing sites, as planned by the Ministry of Health and the Ministry of Works, will considerably increase the cost. The experience of the National Federation is such as to suggest that the Government has been ill-advised and has made decisions in regard to the grouping of Local Authorities (thus forming contracts of such a size that they can only be carried out by the larger contractors), which are not in the interests of the country and, if proceeded with, will not only burden the nation with unnecessarily high costs but will destroy local autonomy and control. It is not too late to modify the decisions, and in sup-

(*Continued on page* 472.)

RATES OF WAGES IN THE BUILDING TRADE

AS AND FROM 8th APRIL, 1944

(Every endeavour is made to ensure accuracy, but we cannot be responsible for errors)

	Crafts-men.	Lab-ourers.		Crafts-men.	Lab-ourers.		Crafts-men.	Lab-ourers.		Crafts-men.	Lab-ourers.
Aberavon	2/0	1/7	Cleveleys	2/0	1/7	Isle of Thanet	1/10	1/5½	Saxmundham	1/8½	1/4½
Aberdare	2/0	1/7	Clitheroe	2/0	1/7	Isle of Wight	1/9½	1/5	Scarborough	1/11½	1/6½
Abergavenny	1/10½	1/5½	Cobham (Surrey)	1/11	1/6½	Keighley	2/0	1/7	Scunthorpe	2/0	1/7
Abingdon	2/0	1/7	Colchester	1/11½	1/6½	Kenilworth	2/0	1/7	Selby	2/0	1/7
Accrington	1/8½	1/4½	Colwyn Bay	1/11½	1/6½	Kettering M.B.	2/0	1/7	Sevenoaks	1/10½	1/5½
Aldeburgh	1/10½	1/5½	Congleton	1/11½	1/6½	Kidderminster M.B.	1/11½	1/6½	Sheerness	1/10	1/5½
Aldershot	2/0	1/7	Coventry C.B.	2/0	1/7	King's Lynn	1/10	1/5½	Sheffield	2/0	1/7
Alfreton U.D.	1/11½	1/6½	Cranbrook	1/10	1/5½	Kirkham	2/0	1/7	Shipley	2/0	1/7
Alnwick	2/0	1/7	Cranleigh	1/10	1/5½	Knowle	1/1½	1/6½	Shoeburyness	1/11½	1/6½
Altrincham	1/11½	1/6½	Crawley	1/10	1/5½	Lancaster	2/0	1/7	Shoreham	1/11	1/6½
Amble	1/10½	1/5½	Crewe	1/11½	1/6½	Leamington M.B.	2/0	1/7	Shrewsbury M.B.	1/11½	1/6½
Amersham	2/0	1/7	Cromer	1/9	1/4½	Leatherhead	1/11	1/6½	Sittingbourne	1/10	1/5½
Ammanford	1/10	1/5½	Crowborough	1/10	1/5½	Leeds	2/0	1/7	Skegness U.D.	1/11	1/6½
Andover	1/10	1/5½	Cuckfield	1/10	1/5½	Leicester C.B.	2/0	1/7	Sleaford U.D.	1/10½	1/5½
Ardingly	1/10	1/5½	Darlington	2/0	1/7	Leighton Buzzard	1/9	1/4½	Slough	1/11	1/6½
Arundel	1/10	1/5½	Darwen	2/0	1/7	Letchworth	1/11	1/6½	Smethwick	†2/0	†1/7
Ascot	1/10	1/5½	Daventry M.B.	1/10½	1/5½	Lewes	1/10	1/5½	Southampton	1/11½	1/6½
Ashby-de-la-Zouch U.D.	2/0	1/7	Deal	1/10	1/5½	Lichfield M.B.	1/11	1/6½	Southend-on-Sea	1/11½	1/6½
Ashford (Kent)	1/10	1/5½	Denbigh Town	1/11	1/6½	Lincoln C.B.	2/0	1/7	Southport	2/0	1/7
Ashford (Middlesex)	2/0	1/7	Devizes	2/0	1/7	Littlehampton	1/10	1/5½	South Shields	2/0	1/7
Ashington	1/11½	1/6½	Dewsbury	1/9	1/4½	Liverpool	‡§2/1	¶	Spalding	1/10	1/5½
Ashtead	2/0	1/7	Didcot	2/0	1/7	Llandudno	1/11	1/6½	Stafford M.B.	1/11½	1/6½
Ashton-under-Lyne	2/0	1/7	Diss	1/10	1/5½	Llanelly	2/0	1/7	Staines	1/11	1/6½
Aylesbury	1/10	1/5½	Doncaster	1/8½	1/4½	London—			Stamford M.B.	1/11	1/6½
Aylsham	1/9	1/4½	Dorchester	2/0	1/7	12m. radius	2/1½	1/8	Stevenage	1/11	1/6½
Bagshot	1/10	1/5½	Dorking	1/9½	1/5	12-15m. radius	2/1	1/7½	Stockport	2/0	1/7
Banbury	1/10	1/5½	Dover	1/10½	1/5½	Long Eaton U.D.	2/0	1/7	Stockton-on-Tees	2/0	1/7
Barnsley	2/0	1/7	Dovercourt	1/10	1/5½	Longton	2/0	1/7	Stoke-on-Trent C.B.	2/0	1/7
Barnstaple	1/10	1/5½	Driffield	1/10½	1/5½	Loughborough M.B.	2/0	1/7	Stourbridge M.B.	2/0	1/7
Barrow-in-Furness	2/0	1/7	Droitwich M.B.	1/11½	1/6½	Louth M.B.	1/10½	1/5½	Stourport U.D.	1/11½	1/6½
Barry	2/0	1/7	Dudley M.B.	2/0	1/7	Lowestoft	1/10	1/5½	Stowmarket	1/9	1/4½
Basingstoke	1/10	1/5½	Dunstable	1/10½	1/5½	Luton	1/11½	1/6½	Stratford-on-Avon M.B.	1/11	1/6½
Bath	1/11½	1/6½	Durham City	2/0	1/7	Macclesfield	1/11½	1/6½	Stroud	1/11	1/6½
Batley	2/0	1/7	Eastbourne	1/11	1/6½	Maidenhead	1/11	1/6½	Sunderland	2/0	1/7
Beaconsfield	1/10½	1/5½	E. Glam. (Mon. Val.)	2/0	1/7	Maidstone	1/10½	1/5½	Sutton Coldfield M.B.	2/0	1/7
Beccles	1/8½	1/4½	East Grinstead	1/10	1/5½	Malvern U.D.	1/10½	1/5½	Swaffham	1/8½	1/4½
Bedford	1/11½	1/6½	Edenbridge	1/10	1/5½	Manchester	2/0	1/7	Swanage	1/10	1/5½
Berkhamsted	1/10	1/5½	Ely	1/9	1/4½	Manningtree	1/9	1/4½	Swansea	2/0	1/7
Berwick	1/11½	1/6½	Epping	2/0	1/7	Mansfield M.B.	2/0	1/7	Swindon	1/10½	1/5½
Beverley	2/0	1/7	Exeter	1/11½	1/6½	March	1/9	1/4½	Tamworth M.B.	1/11½	1/6½
Bexhill	1/10½	1/5½	Exmouth	1/10½	1/5½	Margate	1/10	1/5½	Taunton	1/10½	1/5½
Bideford	1/10	1/5½	Fakenham	1/10½	1/5½	Market Harborough	1/11	1/6½	Tenterden	1/10	1/5½
Biggleswade	1/10	1/5½	Falmouth	1/10½	1/5½	Matlock U.D.	1/10½	1/5½	Thames Haven	2/0	1/7
Billericay	1/9½	1/5	Fareham	1/11	1/6½	Melton Constable	1/8½	1/4½	Thetford	1/9½	1/5
Birchington	1/10	1/5½	Faversham	1/10	1/5½	Melton Mowbray	1/11	1/6½	Thorpe Bay	1/11½	1/6½
Birkenhead	‡§2/1	¶	Felixstowe	1/11	1/6½	Merthyr	2/0	1/7	Todmorden	2/0	1/7
Birmingham C.B.	†2/0	†1/7	Filey	1/10½	1/5½	Middlesbrough	2/0	1/7	Tonbridge	1/10½	1/5½
Bishop Auckland	2/0	1/7	Fleetwood	2/0	1/7	Middleton	2/0	1/7	Torquay	1/11½	1/6½
Bishop's Stortford	1/11	1/6½	Flint	2/0	1/7	Middlewich	1/11½	1/6½	Totnes	1/10	1/5½
Blackburn	2/0	1/7	Folkestone	1/10	1/5½	Milford Haven	1/10½	1/5½	Trowbridge	1/9	1/4½
Blackpool	2/0	1/7	Frinton-on-Sea	1/10	1/5½	Morecambe	2/0	1/7	Truro	1/9½	1/5
Blyth	2/0	1/7	Frome	1/9	1/4½	Morley	2/0	1/7	Tunbridge Wells	1/10½	1/5½
Bognor Regis	1/10	1/5½	Gainsborough U.D.	1/11	1/6½	Mundesley	1/9	1/4½	Uppingham (Salop)	1/11½	1/6½
Bolton	2/0	1/7	Gateshead	2/0	1/7	Nantwich	1/11½	1/6½	Uttoxeter U.D.	1/10½	1/5½
Bournemouth	1/11	1/6½	Gillingham (Kent)	1/11	1/6½	Nelson	2/0	1/7	Wakefield	2/0	1/7
Bracknell	1/10	1/5½	Glossop	2/0	1/7	Newark-on-Trent	1/11½	1/6½	Walsall C.B.	2/0	1/7
Bradford	2/0	1/7	Gloucester	1/11½	1/6½	Newbury	1/10	1/5½	Walsden	2/0	1/7
Bradford-on-Avon	1/9	1/4½	Godalming	1/10	1/5½	Newcastle-on-Tyne	2/0	1/7	Walton-on-Naze	1/10	1/5½
Braintree	1/10	1/5½	Goole	2/0	1/7	Newcastle-u.-Lyme	2/0	1/7	Ware	1/11½	1/6½
Brentwood	1/11½	1/6½	Gosport	1/11½	1/6½	New Forest	1/10	1/5½	Warminster	1/9	1/4½
Bridgwater	1/10½	1/5½	Grantham M.B.	1/11	1/6½	Newmarket	1/10	1/5½	Warrington	2/0	1/7
Bridlington	1/11½	1/6½	Gravesend	1/11½	1/6½	Newport, Mon.	2/0	1/7	Warwick M.B.	2/0	1/7
Brighouse	2/0	1/7	Great Yarmouth	1/10	1/5½	Newport Pagnell	1/10	1/5½	Wellington R.D.	1/11½	1/6½
Brighton	1/11	1/6½	Grimsby	2/0	1/7	Northampton C.B.	2/0	1/7	Welwyn	1/11	1/6½
Bristol	2/0	1/7	Guildford	1/10	1/5½	Norwich	2/0	1/7	Welwyn Gar. City	2/0	1/7
Broadstairs	1/10	1/5½	Guilsborough	1/10½	1/5½	Nottingham	2/0	1/7	Wells (Norfolk)	1/8½	1/4½
Bromsgrove U.D.	1/11½	1/6½	Halifax	2/0	1/7	Nuneaton	2/0	1/7	West Bromwich C.B.	2/0	1/7
Buckley	2/0	1/7	Hanley	2/0	1/7	Oakham U.D.	1/10½	1/5½	Westcliff-on-Sea	1/11½	1/6½
Bungay	1/8	1/4	Harpenden	1/11	1/6½	Oldham	2/0	1/7	Weston-super-Mare	1/11	1/6½
Burnham-on-Crouch	1/8½	1/4½	Harrogate	2/0	1/7	Ormskirk	2/0	1/7	Weybridge	1/11	1/6½
Burnley	2/0	1/7	Hartlepools	2/0	1/7	Oxford	1/11½	1/6½	Weymouth	1/10	1/5½
Burnham	2/0	1/7	Harwich	1/10	1/5½	Oxted	1/10½	1/5½	Whitby	1/11	1/6½
Burton-on-Trent C.B.	2/0	1/7	Haslemere	1/10	1/5½	Paignton	1/11½	1/6½	Whitstable	1/10	1/5½
Bury	2/0	1/7	Hastings	1/10	1/5½	Peterborough (Borough)	1/11½	1/6½	Widnes	2/0	1/7
Bury St. Edmunds	1/9½	1/5	Hatfield	1/11½	1/6½	Plymouth	2/0	1/7	Wigan	2/0	1/7
Buxton	1/11½	1/6½	Haywards Heath	1/10	1/5½	Pontefract	2/0	1/7	Wigton	1/10½	1/5½
Byfleet	1/10½	1/5½	Hednesford	1/11½	1/6½	Pontypridd	2/0	1/7	Willington	2/0	1/7
Cambridge	2/0	1/7	Hemel Hempstead	1/11	1/6½	Port Talbot	2/0	1/7	Wilmslow	2/0	1/7
Canterbury	1/10	1/5½	Henley-on-Thames	1/10	1/5½	Portsmouth	1/11½	1/6½	Winchester	1/10½	1/5½
Cardiff	2/0	1/7	Hereford	1/10	1/5½	Preston	2/0	1/7	Windermere	1/10½	1/5½
Carlisle	2/0	1/7	Herne Bay	1/11½	1/6½	Pulborough	1/10	1/5½	Windsor	1/11	1/6½
Carnforth	2/0	1/7	Hertford	2/0	1/7	Ramsgate	1/10	1/5½	Wisbech	1/9½	1/5
Castleford	2/0	1/7	Heysham	1/11	1/6½	Reading	1/11½	1/6½	Witham	1/10	1/5½
Caterham	2/0	1/7	Hitchin	1/11½	1/6½	Redditch U.D.	1/11½	1/6½	Woking	1/10½	1/5½
Chard	1/9	1/4½	Hoddesdon	1/11½	1/6½	Redhill	1/10½	1/5½	Wokingham	1/10	1/5½
Chatham	1/11	1/6½	Holt (Norfolk)	1/8½	1/4½	Ripon	1/10½	1/5½	Wolverhampton C.B.	2/0	1/7
Chelmsford	1/11½	1/6½	Horley	1/10	1/5½	Rochdale	2/0	1/7	Woodbridge	1/9½	1/5
Cheltenham	1/11	1/6½	Horsham	1/10	1/5½	Rochester	1/11	1/6½	Worcester C.B.	1/11½	1/6½
Chepstow	1/11½	1/6½	Horwich	2/0	1/7	Rugby M.B.	2/0	1/7	Workington	1/10½	1/5½
Chertsey	1/11	1/6½	Huddersfield	2/0	1/7	St. Albans	1/11½	1/6½	Worksop	1/11½	1/6½
Chester	2/0	1/7	Hull	2/0	1/7	St. Helens	2/0	1/7	Worthing	1/10	1/5½
Chesterfield M.B.	2/0	1/7	Hunstanton	1/9	1/4½	St. Neots	1/9½	1/5	Wrexham	1/11½	1/6½
Chichester	1/10	1/5½	Huntingdon	1/9½	1/5	Saffron Walden	1/9	1/4½	Wycombe	1/9½	1/5
Chorley	2/0	1/7	Ilfracombe	1/10	1/5½	Salisbury City	1/9½	1/5	Wymondham	1/11	1/6½
Cirencester	1/9½	1/5	Ingatestone	1/10½	1/5½	Salisbury Plain	1/11	1/6½	Yeovil	1/9	1/4½
Clacton	1/10	1/5½	Ipswich	1/11½	1/6½	Sawbridgeworth	1/10½	1/5½	York	1/10½	1/5½
										2/0	1/7

† Plus 2d. per working day. ‡ Plasterers 2/1½. ¶ Tradesmen's Labourers, 1/7½. Navvies and General Labourers, 1/6½.

§ Joiners, Plumbers, Bricklayers, Tilers and Masons receive 2/- per week or 4d. per day Tool Money.

NOTE.—Carpenters, Joiners and Plumbers in all Towns and Districts (other than Birkenhead and Liverpool) receive 2d. per day Tool Allowances.

WOMEN'S RATES.—In all districts throughout the country the basic rate of wages for women engaged on craft processes is 1/6½ per hour after the conclusion of a probationary period of three months. During the probationary period the rate of wages is first month 1/0½ per hour, second month 1/2½ per hour, and third month 1/4½ per hour. For all women carrying out work other than on craft processes, 1/3 per hour.

For Building Trade Wages in Scotland, see page 471.

PRICES CURRENT OF MATERIALS*

NOTE.—These prices apply to large quantities of materials at works at London stations, or site, in London area as stated. Prices for smaller quantities ex merchant's warehouse will of course be higher. Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry. The prices of soft woods are for cash on delivery.

BRICKS, &c.

	£ s. d.
First Hard Stocks	4 16 0
Second Hard Stocks	4 9 0
Mild Stocks	3 16 0
Single Rough Stocks	3 10 0
Common Stocks	3 0 6

All loaded free into lorry at the works. The question of haulage is still very difficult and prices must be obtained from job to job. *In addition*, there will be the Levy under the Bricks (Charges) Order, 1942, of 3s. per 1,000.

	London Rated Stations	Site in London Area, North of Thames
2½ in. Phorpres. A discount of 6d. 1,000 only per 1,000 monthly account.	£ s. d. per 1,000	£ s. d. per 1,000
Pressed	58 3	68 3
Keyed	60 3	70 3
Single Bullnose	78 3	88 3
Rustics	78 3	88 3
Whites	78 9	88 3

	£ s. d.
Best blue Pressed Staffs. (London Stns.)	11 12 0
Do. Bullnose (London Stns.)	12 2 0
Blue Wire Cuts (London Stns.)	10 9 6

Best Stourbridge Fire Brick (London Stns.) :—

£ s. d.	£ s. d.
2½ in. 10 0 0	3 in. 12 0 0

GLAZED BRICKS (London Stns.). Add 12½% to Prices.

Best White Ivory and Salt Glazed Stretcher	38 10 0
D'ble Str'tch'rs and D'ble Headers	35 10 0
30 0 0 One side&two ends	39 10 0
Headers 29 10 0 Two sides&one end	40 10 0
Quoins, Bullnose and 4½in.Flats 36 10 0	Splays and Squints 38 0 0

Second Quality, £2 per 1,000 less than best. Cream and buff, £2 extra over white. Other colours. Hard Glaze, £5 10s. extra over white.

ABO LEVY ON BRICKS, 3/– per 1,000 except Glazed Bricks.

PARTITION SLABS.

Delivered London Area.
12 miles radius Charing Cross.

HOLLOW CLAY PARTITION BLOCKS.
London Brick Company.

Minimum Lorry Loads. Keyed.	s. d.
2" per yd. sup. 120 yds.	2 8
2½" " " 110 "	2 11
3" " " 100 "	3 6
4" " " 84 "	4 0

Half blocks *add* 2s. per yard super to above prices.

CLINKER CONCRETE.

2" per yd. sup. .. 1 11	3" per yd. sup. .. 2 6
2½" " " 2 3	4" " " 3 6

CRANHAM TERRA COTTA.

Size 12 x 9 x 2" per yd. super	2 8
Size 12 x 9 x 2½" " "	2 11
Size 12 x 9 x 3" " "	3 6
Size 12 x 9 x 4" " "	4 0

HEMPSTEAD—KEYED TWO SIDES.

12" x 9" x 2" 2 8	12" x 9" x 3" 3 6
12" x 9" x 2½" 2 11	12" x 9" x 4" 4 0

Per yard super d/d. Free on site, London.

Plus 2d. for smooth one side, and 4d. for smooth both sides.

STONE.

	s. d.
BATH STONE.—Delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	3 3½
BEER STONE—RANDOM BLOCK—	
Free on rail at Seaton Station per ft. cube	2 3
Delivered free on rail Nine Elms, S.R. "	3 1½
Selected approximate size one way, 1d. per cubic ft. extra, selected approximately three sizes or for special work, 3d. per cubic ft. extra.	
PORTLAND STONE—	
Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Nine Elms, S. Rly., South Lambeth Station, G.W.R., and Westbourne Park, Paddington, G.W.R. .... per ft. cube	4 7
Do. do. delivered on road waggons as above stations ..... per ft. cub.	4 7
White basebed, 3d. per ft. cube extra.	
NOTE.—1d. per ft. cube extra for every ft. over 20 ft. *average* and ¼d. beyond 30 ft.	
HOPTON-WOOD STONE—	s. d.
F.O.R. Quarries, Wirksworth, Derbyshire, Random blocks from 10ft. and over P.ft.cb.	13 2
Sawn two sides	26 11
Sawn three or four sides	31 11
YORK STONE, BLUE—*Robin Hood Quality*. Delivered at any Goods Station, London.	
6 in. sawn two sides landings to sizes (under 30 ft. super) ..... per ft. super	5 6
6 in. rubbed two sides, ditto "	6 3
3 in. sawn two sides slabs (random sizes) ..... "	2 7
2 in. to 2½ in. sawn one side slabs (random sizes) (paving) ..	1 8½
1½ in. to 2 in. ditto ..... "	1 4½
HARD YORK—	
Delivered at any Goods Station, London.	
Scrappled random blocks .. per ft. cube	6 10
6 in. sawn two sides landings to sizes (under 40 ft. super) ..... per ft. super	5 7½
6 in. rubbed two sides, ditto "	6 9
4 in. sawn two sides slabs (random sizes) ..... "	3 5
3 in. ditto ditto ..... "	2 8
2 in. self-faced random flags .. per yd. super	8 9

CAST STONE.

Delivered in London area in full van loads, per ft. cube : Plain, 7s. 6d. Moulded, 8s. 6d.
Small section cills and copings, 11s.

SAND.

Thames Ballast	11s. 6d. per yd.	
Pit Ballast	10s. 0d. " "	delivered 2 miles radius Paddington.
Pit Sand	12s. 0d. " "	
Washed Sand.....	13s. 0d. " "	
½ in. Shingle	10s. 6d. " "	
½ in. Broken Brick	16s. 0d. " "	
Pan Breeze.....	10s. 0d. " "	

CEMENT.

	£ s. d.
Best British Portland Cement. Standard Specification, delivered London area.	
6 ton loads and upwards site .... per ton	2 11 0
1 to 6 tons site	2 14 0
Alongside Vauxhall in 80-ton lots	2 8 6
"Ferrocrete" Rapid Hardening Cement—	
6 ton loads and upwards site	2 17 0
1 to 6 tons site	3 0 0
Alongside Vauxhall in 80-ton lots	2 14 6
"Aquacrete" Water Repellent, "Blue Circle" cement, 30s. per ton on ordinary "Blue Circle" prices.	
"Colorcrete" Nos.1 and 2. Coloured rapid Hardening Portland Cement in 6 ton lots	4 11 0
"Colorcrete" not rapid hardening, according to colour, from £7 to £15 10s. per ton.	
"Snowcrete" White Portland Cement (in free paper bags)	11 5 0
Under one ton ..... per cwt.	0 13 2
"417" Cement (Ultra Rapid Hardening) Delivered Site London Area in 6 tons lots and upwards	3 11 0
Plus packages at current prices.	
Super Cement (Waterproof), bags extra.	4 1 0

NOTE.—Jute sacks charged at 35s. 6d. nett per ton (20 sacks) for quantities of or exceeding one ton.
Less than one ton 1s. 9½d. nett each.
Credit 1s. 6d. nett each when returned in good condition within two weeks.

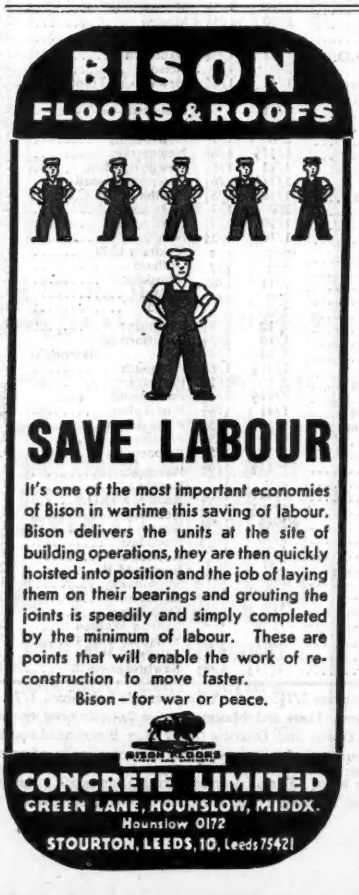
	£ s. d.		£ s. d.
Roman Cement	8 10 0	Keene'sCement, White	7 0 0
Parian Cement	7 0 0	" Pink	6 10 0

Cementone Colours for cement according to tints, per cwt. from £3 5s. 0d.

SLATES.

First quality slates from Penrhyn or Portmadoc, carriage paid in full truck loads to London Rate Station.

Per 1,000 actual	£ s. d.		£ s. d.
24 by 12	45 5 0	18 by 10	24 0 6
22 by 12	37 17 6	18 by 9	22 12 0
22 by 11	34 2 6	16 by 10	21 10 6
20 by 12	33 0 0	16 by 8	16 12 6
20 by 10	30 5 0		


BISON
FLOORS & ROOFS
SAVE LABOUR
It's one of the most important economies of Bison in wartime this saving of labour. Bison delivers the units at the site of building operations, they are then quickly hoisted into position and the job of laying them on their bearings and grouting the joints is speedily and simply completed by the minimum of labour. These are points that will enable the work of reconstruction to move faster.
Bison—for war or peace.
BISON FLOORS
CONCRETE LIMITED
GREEN LANE, HOUNSLOW, MIDDX.
Hounslow 0172
STOURTON, LEEDS, 10, Leeds 75421

PLASTER.

	£ s. d.		£ s. d.
Coarse, Pink....	4 2 6	Sirapite, Coarse	4 11 6
" White ..	4 10 0	" Finish	4 19 6
Pioneer	5 5 0		

Above prices for 4-ton loads and over London Area.

Best Ground Blue		Grey Stone Lime	3 1 0
Lias Lime ..	3 7 6	Chalk Lime	3 1 0
Granite Chippings	2 0 0	Hair per cwt. ..	3 15 0

NOTE.—Sacks are charged 1s. 9d. each, and credited 1s. 6d. if returned in good condition within three months, carriage paid.
Stourbridge Fireclay in paper bags, £2 12s. 6d. 6-ton lots at railway depot.

TILES.

Delivered at London rate stations in full truck loads of not less than 6 tons	Per 1,000 f.o.r. London.
Best machine-made tiles from Broseley or Staffordshire district	£6 12 9
Ditto hand-made ditto	7 19 9
Ornamental ditto	8 7 0
Hip and valley tiles—Hand-made	16 4
(per dozen) —Machine-made	15 7

HARD WOOD.

1 INCH AND UP THICK.

Average price for prime quality	s. d.		Foot cube. £ s. d.
Dry English Wainscot Billets	16 0	to	0 18 0
Dry Slavonian Billet Wainscot ..	17 0	to	1 0 0
Dry Cuba Mahogany logs	21 0	to	1 4 0
Square-edged Honduras Mahogany			0 16 6
Log Cut Honduras Mahogany			0 17 6
American Figured Oak			0 13 0
American Plain Oak.....			0 12 6
Jap, Figured Oak			0 13 0
Jap, Plain Oak			0 12 6
Teak			0 15 6
American Whitewood			0 12 6
African Whitewood			0 8 0
African Mahogany			0 11 0
Australian Walnut			0 19 0
Australian Silky Oak			0 12 6
Best Scotch glue		per cwt.	5 0 0
Liquid glue.....		per gallon	1 2 0

SOFT WOOD.

MERCHANTABLE BRITISH COLUMBIAN PINE.

	Minimum. £ s. d.	Maximum. £ s. d.
Scantlings in imported sizes 2 in. by 3 in. to 4 in. by 11 in.	47 0 0	58 0 0

PLANED BOARDS.
PRIME CLEAR BRITISH COLUMBIAN PINE.

	Per standard. £ s. d.
1 in. by 11 in. / 1 in. by 9 in.	71 0 0

	Per square. s. d.
1 in. plain edge flooring	56 3
1½ in. ditto	70 6
1 in. tongued and grooved	56 3
1½ in. ditto	70 6

MATCHING.

	per square. s. d.
¾ in.	40 0
⅞ in.	45 3
1 in.	59 0

PLUMBERS' BRASS WORK.

Delivered in London.
M.O.H.
S.D. BIBCOCKS CRUTCH HEAD, FOR IRON

½ in.	¾ in.
33/–	51/– per doz.

TOILET BIB COCKS FOR IRON.

½ in.	¾ in.
60/–	72/– per doz.

S.D. STOP COCKS FOR IRON.

¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
33/–	48/–	86/–	209/–	281/–	456/– per doz.

S.D.S. COCKS WITH TWO UNIONS FOR LEAD.

¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
45/–	77/6	123/–	240/–	372/–	624/– per doz.

DOUBLE NUT BOILER SCREWS.

¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.	2 in.
5/6	6/8	11/–	24/–	36/–	56/– per doz.

HEAVY CROYDON BALL VALVES.

¼ in.	⅜ in.	1 in.	1¼ in.	1½ in.
72/–	115/–	144/–	288/–	384/– per doz.

CAPS AND SCREWS.

1¼ in.	1½ in.	2 in.	3 in.	3½ in.	4 in.
14/–	18/6	25/9	45/3	64/9	71/6 per doz.

BRASS SLEEVES.

1½ in.	2 in.	3 in.	3½ in.	4 in.
10/9	13/6	25/–	37/–	46/– per doz.

LEAD TRAPS WITH BRASS CLEANING SCREWS.

	1½ × 6 lbs.	1½ × 6 lbs.	2 × 7 lbs.	3 × 7 lbs.
Lead P.	26/–	34/–	55/–	92/– per doz.
Lead S.	34/–	41/–	67/–	115/– per doz.

SOLDER.—Plumbers', 1/7. Tinmen's, 2/1. Blow pipe 2/6 per lb.

* The information given on this page has been specially compiled for THE BUILDER, and is copyright. The aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information. Prices are subject to 2½ per cent. cash discount.

PRICES CURRENT OF MATERIALS—(contd.)

See Note at top of preceding page.

METALS.

Joists, Girders, &c., to London Station	per ton—	
R.S. Joists, cut and fitted	£24	0 0
Plain Compound Girders	26	10 0
,, Stanchions	29	0 0
In Roof Work	35	0 0

Note.—These prices are for standard pieces and not special pieces of an awkward nature.

MILD STEEL ROUNDS.—To London Stations, per ton.

Diameter.	£ s. d.	Diameter.	£ s. d.
¼ in.	23 5 0	½ in.	21 15 0
⅜ in.	22 15 0	¾ in. to 2½ in.	21 5 0
½ in.	22 5 0		

Wrought Tubes and Fittings.

Deliveries from works.

Deliveries from London stock further 2½% gross.

10/17

	Tubes. ½"/6" %	Tubulars, ½"/6" %	and 19/24" ½"/2" %	Flanges. 2½"/6" %
Light weight	31½	—	47½	51 57½
Heavy weight	44	44	39½	41 49½
Galv. lightweight	30	—	30	30 30
Galv. heavyweight	20	20	20	20 20

Tubes and tubulars sizes ⅛"/¼" inclusive, charged extra of 5% less gross.

Fittings. Figs. 25/34 5% less gross discount.

Terms.—Nett cash end of month following date of invoice. Carriage paid on lots of £10 nett value and over.

C.I. Half-Round Gutters—London Prices ex Works, per yd. in 6 ft. lengths.

	Gutters.	Nozzles.	Stop ends.
3 in.	1/5½	1/2½	4½d.
3½ in.	1/7	1/4	4½d.
4 in.	1/7	1/6	6½d.
4½ in.	1/8½	1/8½	7½d.
5 in.	2/0½	2/0	9d.
O.G. Gutters.			
3 in.	1/10½	1/7½	5d.
3½ in.	2/1½	1/7½	6½d.
4 in.	2/1½	1/8½	7½d.
4½ in.	2/2½	1/11½	8½d.
5 in.	2/8½	2/3	10½d.

RAIN WATER PIPES.

Per yd. in 6 fts.	Pipe.	Bends, Stock angles.	Branches.
2 in.	2/2½	1/5½	2/2
2½ in.	2/3½	1/8½	2/7½
3 in.	2/8½	2/1½	3/2
3½ in.	3/2½	2/6½	3/7½
4 in.	3/8½	3/0½	4/5

NETT PRICES.

Tonnage allowance—4-ton lots, 5 per cent.
2-ton lots, 2½ per cent.

L.C.C. Coated Soil Pipes—London Prices, ex Stock.

Per yd. in 6 fts.	Pipe.	Bends.	Branches
2 in.	3/9½	2/7½	3/2
2½ in.	4/5	2/10½	3/11½
3 in.	4/9	3/2	4/8½
3½ in.	4/10½	3/11½	5/5½
4 in.	5/3½	4/5	6/3½

L.C.C. Coated Drain Pipe.

cwt. qr. lbs. in 9 fts.	per yard.	Bends.	Branches.
3 in. 0 3 14	6/0	7/3	11/6
4 in. 1 1 17	8/7	8/2	14/5
5 in. 1 2 18	10/7	14/9	22/3
6 in. 2 0 1	12/9	17/0	29/8

Gaskin, 75/- per cwt.

	Per ton basis in London. £ s. d.
Iron.—Staffordshire Crown, Merchant quality	18 7 6
Iron.—Staffordshire Marked Bars	19 7 6
Mild Steel Bars	19 15 0
Mild Steel Hoops	21 10 0
	Ex Merchant's Stock, per ton (two-ton lots).
Soft Steel Sheets, C.R. and C.A.—	
20 gauge	24 17 6
24 gauge	25 2 6
26 gauge	25 17 6
Galvanised Corrugated Sheets, 6 ft. to 9 ft.—	
20 gauge	27 0 0
24 gauge	27 10 0
26 gauge	28 15 0
Galvanised Flat Sheets, C.R. and C.A.—	
20 gauge	28 10 0
24 gauge	29 0 0
26 gauge	30 5 0
	Per ton £ s. d.
Cut Nails, 3 in. and up	28 10 0

All Nett.

Metal Windows.—Standard sizes, suitable for complete houses, including all fittings, painting two coats, and delivery to job, average price about 2s. 4d. to 2s. 7d. per foot super.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil (5 galls.) .. per gallon	0 7 0
Boiled Linseed Oil (5 galls.) .. ,,	0 7 4
Genuine Ground English White Lead, per cwt.	3 11 9
Genuine White Lead Paint, 14-lb. tins free, per cwt.	4 16 6
Genuine Red Lead .. ,,	2 18 6
Linseed Oil Putty (Kegs extra) .. ,,	1 5 3
Utility Putty (Packages returnable) ,,	1 3 9
Size, XD quality .. f'kn.	0 4 9

Turpentine substitute can be obtained and prices vary according to quality from 3/8 gallon upwards.

BUILDING TRADE WAGES IN SCOTLAND

Following are grade rates authorised by the Scottish N.J.C. from February 1. Every endeavour is made to ensure accuracy, but we cannot be responsible for errors that may occur.

Grade Classification	A	A1	A2	A3	B	B1
Craftsmen	2/0½	2/0	1/11½	1/11	1/10½	1/10
Labourers	1/7	1/6½	1/6½	1/6	1/5½	1/5½

Aberdeen	A	Dumfriesshire	A2	Inverness	*	Perthshire	A2
Ayrshire	A	Dundee	A	Inverurie	A1	Peterhead	A1
Banff	B	Dunoon	A	Kincardineshire	A2	Renfrewshire	A
Berwickshire	A2	East Fife	A	Kinross-shire	A	Rothesay	A
Bridge of Allan	A	East Lothian	A	Lanarkshire	A	Roxburghshire	A2
Broughty Ferry	A	Edinburgh	A	Midlothian	A	St. Andrews	A
Clackmannanshire	A	Fifeshire	A	Monifieth	A	Selkirkshire	A2
Doune	A	Forfarshire	A2	Moray and Nairn	B	Stewartry	A2
Dumblane	A	Glasgow	A	Newport	A	Stirlingshire	A
Dumbartonshire	A	Greenock	A	Peeblesshire	A2	Stornoway	A2
Dumfries	A1	Hamilton	A	Perth	A	Tayport	A
						West Lothian	A

*This town has its own rates: Masons, 1/9½; Carpenters, 1/9½; Slaters, 1/9½; Plumbers, 1/10; Plasterers, 1/10½ but 1/11 is paid owing to the scarcity at present; Painters, 1/9½ and Labourers, 1/5.

The information given in this table is copyright. Rates of wages in England and Wales are given on page 469

VARNISHES, &c.

		Per gallon. £ s. d.
Oak Varnish	Outside	0 16 0
Fine do.	,,	0 18 0
Fine Copal	,,	1 0 0
Pale Copal	,,	1 2 0
Pale Opal Carriage	,,	1 6 0
Best do. do.	,,	1 14 0
Floor Varnish	Inside	1 0 0
Fine Pale Paper	,,	1 0 0
Fine Copal Cabinet	,,	1 4 0
Fine Copal Flatting	,,	1 2 0
Hard Drying Oak	,,	1 0 0
Fine Hard Drying Oak	,,	1 1 6
Fine Copal Varnish	,,	1 2 6
Pale do.	,,	1 14 0
Best do.	,,	1 4 6
Best Japan Gold Size	,,	1 14 6
Best Black Japan		0 12 0
Oak and Mahogany Stain (water)		0 14 0
Brunswick Black		0 9 6
Berlin Black		0 16 0
Knotting (patent)		0 17 0
French and Brush Polish		0 14 0
Liquid Dryers in Terebene		0 11 6

LEAD, &c.

(Delivered in London.)	Per ton. £ s. d.
Lead.—Sheet, English, 4 lb. and up	38 0 0
Pipe in coils	38 10 0
Soil pipe	42 10 0
Compo pipe	47 10 0

Note.—Country delivery, 20/- per ton extra, lots under 3 cwt. 4/- per cwt. extra and over 3 cwt. and under 5 cwt., 2/6 per cwt. extra. Cut to sizes, 4/- per cwt. extra.

Old lead, ex London area, at Mills ..... per ton £18 0 0.

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THE SCOTTISH BUILDER

NEW BUILDINGS

DUNFERMLINE.—Dean of Guild Court has passed plans for extension at Maternity hospital, at £10,000.

CROSSFORD.—Plans in hand for scheme of housing conversion, reconstruction and additions at Annabella Cottages, for which the architect is P. M. Gilchrist, Nethanfoot, Crossford.

GLASGOW.—Plans in hand for alterations and additions at Aytoun-rd., for which the architects are R. A. Bryden, Robertson & Boyd, 122, Hatton-gdn., Glasgow.

GLASGOW.—Plans in hand for alterations and additions for the Girls' School Co., Ltd., 142, St. Vincent-st., at Woodlands-ter., for which the architect is James Stewart, 143, West Regent-st., Glasgow.

GLASGOW.—Plans prepared for plant storage building and lavatory accommodation, for which the architect is R. W. Caldwell, 658, Shields-rd., Glasgow.

GLASS.

SHEET GLASS, ORDINARY GLAZING QUALITY CUT SIZES.

	Per ft. super. d.
18 oz.	3½
24 oz. Clear or "R" quality	5
26 oz.	6½
32 oz.	8½

ENGLISH ROLLED PLATE AND FIGURED CATHEDRAL, ETC., IN CUT SIZES.

Over 500 ft. super of all kinds.	Per ft. d.
Rolled plate, ¼ in.	6½d.
Rough cast double rolled, ⅜ in.	7½d.
Rough cast double rolled, ½ in.	7½d.
Figured rolled, and Cathedral, white	6½d.
Figured rolled and Cathedral, tinted	9½d.
Rolled Sheet	6d.
Reeded, Broad Reeded, Cross Reeded and Chevron Reeded, ¼ in. thick	10½d.

Rolled plate is the same price as rough cast double rolled.

	Per ft. s. d.
Wire Rolled, ¼ in. thick	0 9½
Wire Cast, ¼ in. thick	0 9½
Georgian Wired Cast	0 10
"Calorex" Sheet, 21 oz.	2 6
,, ,, 32 oz.	4 0
,, Cast, ¼ in. thick	0 9½
,, ,, ⅜ in. thick	1 0
,, ,, ½ in. thick	1 2
Non Actinic Glass, ¼ in. thick	0 9½
,, ,, ,, ⅜ in. thick	1 0
,, ,, ,, ½ in. thick	1 2

"VITA" GLASS.

	Per ft. s. d.
"Vita" Plate Glass, about ⅛ in. thick— To 7 ft. super	5 0
Over 7 ft. super	7 6
"Vita" Sheet Glass, about 18/20 oz.	2 0
Cathedral "Vita" Glass: ¼ in. thickness	2 0
⅜ in. ,,	3 0
⅛ in. Georgian Wired "Vita" Glass	3 6

GLASS BRICKS.

	s. d.	
P.B. 1—8 in. × 4½ in. × 3½ in.	2 9	each nett
P.B. 2—5½ in. × 5½ in. × 3½ in.	2 6	,,
P.B. 3—7½ in. × 7½ in. × 3½ in.	3 6	,,
P.B. 32—7½ in. × 7½ in. × 3½ in.	3 6	,,

Radiused Corner Bricks to match up with—

P.B. 2	4 6	each nett
P.B. 3	6 0	,,
P.B. 32	6 0	,,

ADVANCE PREPARATION OF HOUSING SITES

(*Concluded from page 468.*)

port of its plea that the procedure should be revised, the National Federation submit the following arguments:—

(1) In rural and urban areas the type of firm who undertook this work before the war was generally the local building contractor familiar with local conditions.

(2) Heavy civil engineering plant such as was capable of economic use on the construction of airfields is not suitable for or adaptable to these small road works whether grouped or not. The grouping of a number of small road and sewer works to be carried out on separate sites (which in the majority of cases would be some miles apart) into one contract will not necessitate the use of any heavier plant than that which is required an any one of the sites.

(3) The ultimate responsibility for the houses will be that of the individual Local Authorities; it is therefore unwise and unnecessary to divorce from the individual authorities the responsibility for having the roads and sewers provided in the most economical way.

(4) The grouping proposals introduce difficulties which are likely to delay the start of the works. The basis of tendering and the proposed form of contract are not desirable either in the interests of speed or economy.

(5) The imminence of the Second Front must render it a matter of conjecture as to whether the heavy civil engineering plant and the large contractors with their organisations will be available for works other than those of military significance, whereas the local contractor is more likely to be available.

(6) The medium-sized and smaller builders (who with their organisations represent the major portion of the industry) have a very important part to play in post-war reconstruction. During the nation's emergency they have accepted with relatively slight protest the arbitrary treatment of temporary bureaucrats whose rough-and-ready methods may or may not have been justified by national war-time necessity. They cannot, however, view without grave concern what appears to be an attempt to carry over into the post-war period the extravagant despotism of the Ministries, whose preference for certain selected contractors is indicated by their willingness to place plant and more particularly labour at the disposal of these selected large contractors while refusing similar facilities to the local building contractors.

(7) Labour is classified to-day as mobile and immobile; the younger and more virile labour is mobile and is capable of direction by the Ministry of Labour to any area, and may under existing regulations only work where directed. When directed away from their homes mobile labour is paid certain allowances which add considerably to the cost of the work. The same labour, if once unfrozen, could return to its home towns, thus removing one cause of temporary housing shortage by reducing the demand for lodging accommodation, and by being at home would work more happily. That would ensure a more or less general distribution of labour throughout the country. The proposed work in advance preparation for the construction of houses must presumably be reasonably evenly distributed throughout the country. Therefore the same results could be achieved by unfreezing the mobile labour as by directing it. But there would be considerable economies in the employment of men in the areas of their home towns because lodging allowances and other expenses would not be necessary.

(8) Once labour is unfrozen and properly dispersed (as it could be by discharging the men whenever the works upon which they are at present engaged come to an end) they would be available for employment in the areas of their home towns. These men would be immediately employed upon the road work for their own Local Authority if W.B.A. priority was given to such work. There is no justification for the Ministry of Works decision that W.B.A. priority shall be available for such works when grouped and undertaken by the selected large contractors and refused to the same works when ungrouped they are separately undertaken by the local building contractors. By refusing to give individual Local Authorities W.B.A. priority for this work the Ministry of Works in collaboration with the Ministry of Labour is bringing undue bureaucratic pressure to bear upon the Local Authorities in order to secure their acceptance of this ill-conceived grouping scheme.

(9) It is apparent that many Local Authorities do not like these grouping proposals and those that have been induced to accept them have done so only under duress, because of the threat that plant, labour and materials will be withheld unless they participate in the grouping scheme.

The work of advance preparation of housing sites should therefore be let by individual Local Authorities in single contracts capable of being undertaken by the local firms.

"Local Builders Should Do the Work."

That the Government is riding for a fall over its present housing plans was the view expressed by Mr. H. C. Harland, President of the L.M.B.A., at a meeting of the Association's Central No. 5 Area in Putney on Wednesday.

"Builders in London," said Mr. Harland, "are less affected than many others by the Government's proposals for the preparation of housing sites, but we are wholeheartedly behind the National Federation in its protest against the quite ridiculous arrangements which the Minister of Works and the Minister of Health are trying to foist on the local authorities. Every practical builder must be.

"A small job does not become a big job merely because it is joined up with a dozen other small jobs, and to try to use the huge bulldozers we have been using in the construction of aerodromes on local housing sites is literally like taking a sledge hammer to destroy a gnat.

"The big contractors do not want this work, any more than they wanted the work of erecting those rural cottages last year. The Government had to climb down over them. The sooner they climb down over this new muddle the better it will be for all concerned."

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FUTURE CONSTRUCTION

The Editor welcomes authentic information for this section from architects, surveyors or contractors. Items should reach 4, Catherine-street, Aldwych W.C.2, not later than Tuesday morning.

CONTRACTS OPEN

For some contracts still open, but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

JUNE 13.

Manchester T.C.—Alterations to premises at Minshull-st. to form Probation Officers' rooms and Juvenile Court. City Architect. Dep. £1 1s.

†**Notts C.C.**—Erection of central kitchen at Kimberley. County Architect, Shire Hall, Nottingham. Dep. £1 1s.

JUNE 14.

Caernarvon C.C.—Erection of conveniences at Gallt-y-sil Hospital, Caernarvon. Architect's Dept., County Office, Caernarvon.

*†**Isle of Ely C.C.**—Boiler house, Wisbech Institution, also installation of services. R. D. Robson (A.), C. Architect, County Hall, March. Dep. £2 2s. Tenders by July 11.

Manchester Electricity Committee.—Extension to "C" group switchhouse (contract No. 67). H. C. Lamb, Chief E. and Manager, Electricity Dept., Town Hall. Dep. £1 1s.

Salford T.C.—Erection of prefabricated building, together with site works, foundations and finishings at Summerville estate. City E.

JUNE 15.

Lewes T.C.—External painting of 254 houses at Landport estate and 12 flats at Priory-st. C. T. Butler (L.), B.S.

Liverpool T.C.—Extensions to nurses' home, Fazakerley Sanatorium. City Architect and Director of Housing, Blackburn-chambs., Dale-st., Kingsway, Liverpool, 2. Dep. £2 2s.

JUNE 16.

Manchester Transport Committee.—Erection of temporary boiler house at motor 'bus garage. City Architect. Dep. £1 1s.

JUNE 19.

*†**Brighton E.C.**—Erection of prefabricated nursery school at East Moulsecomb. Thos. Simpson & Son, 16, Ship-st., Brighton, architects. Dep. £2 2s. Tenders by July 5.

Cheshire C.C.—Additional temporary nurses' quarters at Dutton P.A. Institution. E. M. Parkes, County Architect, The Castle, Chester. Dep. £2 2s.

Dunfermline T.C.—Work in various trades for erection of 20 additional houses at Brucefield housing scheme. C. R. Douglas & Son, measurers, 15, East Port, Dunfermline. Dep. £1 1s.

Huntingdon County E.C.—Erection and completion of school meals kitchen at Ramsay Forty Foot. T. H. Longstaff, County S. and Architect, Walden House, Huntingdon.

JUNE 20.

York T.C.—Repairs and adaptations at 20, Scarborough-terr.; 32, Newborough-st.; 49 and 51, Lavender-gr.; and 210, Beckfield-la. C. J. Minter, City E. and Architect.

JULY 3.

*Redditch U.D.C.—Completion of 46 houses at Batchley estate. E. Buckley, P.A.S.I., E. and S., Council House. Dep. £5.

NO DATE.

Harwich T.C.—Erection of sub-station. B.S. Dep. £2 2s.

PAINTING, ELECTRIC LIGHTING, HEATING, ETC.

JUNE 12.

Montgomeryshire E.C. — For redecorating various schools. D. of E., County Ed. Offices, Newtown.

JUNE 13.

Norfolk C.C.—External painting work at County Isolation Hospital, East Dereham. C. H. Thurston, Acting County Architect, 25, Thorpe-rd., Norwich.

Salford T.C.—Painting work at schools. D. of E., Chapel-st.

JUNE 14.

Accrington E.C.—Internal painting and decorations at three schools. B.E.

Durham E.C.—Internal painting and decoration of various schools. F. Willey (F.), 34, Old Elvet, Durham.

East Riding C.C.—External painting at schools, police stations, institutions, etc. County Architect, County Hall, Beverley.

Liverpool T.C.—Internal and external painting, also limewashing at certain schools. City E.

Petersfield R.D.C.—For painting 71 houses. Building S., The Old Cottage, Petersfield.

JUNE 15.

Cleckheaton.—Internal painting and decoration at Whitcliffe Mount Grammar School. J. W. H. Bury, Clerk, Ed. Offices, 5, Albion-st.

JUNE 16.

Maltby.—Internal renovations and painting at Grammar School. A. E. Hall, Clerk to the Governors, 44, Moorgate-st., Rotherham.

West Riding C.C.—(1) Internal renovations and external painting at Grammar School, Bingley, also tarpainting playgrounds. Div. Officer for Education, Mornington-rd., Bingley.

JUNE 17.

Henley-on-Thames T.C.—External redecoration of 33 houses at Western-ave. and Vicarage-rd. B.S.

Highworth R.D.C.—External repainting of 62 houses and 3 bungalows. D. S. F. Williams, S., 27, Bath-rd., Swindon.

Sowerby Bridge. — Internal painting at Secondary School. J. H. Crabtree, C., Ed. Office, Allan House, Sowerby Bridge.

West Riding C.C.—Internal renovations and external painting at Grammar School, Harrogate, also external painting of caretaker's house. Ed. Dept., Municipal Offices, Harrogate.

West Riding C.C.—Internal renovations and external painting at Pudsey Grammar School. H. Flather, Clerk to the Governors, Ed. Office, Pudsey.

JUNE 19.

Winsford U.D.C.—Exterior decorating and repairs at 286 houses. P. Heaton, S., Council Offices, Winsford, Ches.

JUNE 24.

Bournemouth T.C.—Internal redecorations at various schools. B.E. and Architect.

Shrewsbury.—External painting and internal redecoration work at County Council Hospital. A. G. Chant, County Architect, 5, Belmont, Shrewsbury.

ROAD, SEWERAGE AND WATER WORKS

JUNE 12.

Stockport C.B.—Taking up tram track and relaying new concrete bed. E. B. Baxter, A.M.Inst.T., General Manager, Transport Offices, Mersey-sq.

JUNE 17.

Gloucester C.C.—Contract No. 1: Construction of about 90 lin. yds. of 6-in. stoneware sewer, etc. Contract No. 2: Construction of about 100 lin. yds. 6-in. stoneware sewer, etc. Construction of about 580 lin. yds. of 9-in. stoneware sewer, etc. W. H. Bateman, Consulting Civil E., Batheaston, Bath. Dep. £2 2s.

Greenock T.C.—Formation of streets and construction of sewers. Master of Works, Municipal-bldgs., Greenock.

JUNE 19.

Godalming T.C.—Boring 12 in. dia. borehole 125 ft. deep., including supplying and fixing of all necessary lining tubes, sandscreen, air and water pipes, etc. C. B. Spivey, A.M.Inst.M. & CyE., Water E., 35, Bridge-st., Godalming. Dep. £1 1s.

Manchester T.C.—For flagging and kerbing repairs (labour only) in various streets. City S.

JUNE 21.

***Ilkeston T.C.**—Advance preparation of building sites. A. O. Marshall, M.Inst., M.&Cy.E., B.E. and S. Dep. £2 2s.

PUBLIC APPOINTMENTS

JUNE 14.

West Sussex C.C.—Two Masters at Junior Technical School for Building, Bognor Regis. Forms of application from D. of E., County Hall, Chichester.

JUNE 16.

***Hull.**—Lecturer in Senior Building Trades Dept. at Municipal Technical College. Forms from D. of E., Guildhall, Hull. (Stamped and addressed foolscap envelope.)

JUNE 17.

***East Sussex E.C.**—(a) Head of Department, (b) Assistant Master at East Grinstead Junior Technical School of Building. Forms from J. H. Baines, D. of E., County Hall, Lewes.

***Oxford E.C.**—Full-time Teacher of Building, Drawing and Geometry at Schools of Technology, Art and Commerce. Forms from Chief Education Officer, City Ed. Office, 77, George-st.

JUNE 21.

Bradford.—Temporary Architectural Assistants. £375, plus £45 10s. war bonus. Applications, quoting E.A. 969 XA. to Ministry of Labour and National Service, Room 432, Alexandra House, Kingsway, London, W.C.2.

JUNE 23.

West Ham C.B. — Temporary Assistant Building Surveyor. £400, plus £49 10s. 9d. war bonus. Forms from B. S., Town Hall, West Ham, E.15.

JUNE 24.

***Manchester T.C.**—Temporary Architectural Assistants. Director of Housing, Town Hall.

JUNE 28.

***Cheshire Joint Sanatorium Board.**—Clerk of Works to superintend erection of extensions at Burntwood Sanatorium. £8 p.w. Forms from G. C. Scrimgeour, Clerk to the Board, St. John's House, Chester.

JUNE 30.

Belfast Education Authority.—Head of Building Trades Department at College of Technology. £600-£25-£700 or £800. Application form from J. Stuart Hawnt, D. of E., Education Office, College of Technology, Belfast.

NO DATE.

***Birmingham E.C.** — Full-time Temporary Lecturer in Building Construction and Ancillary Subjects. Particulars and form from Principal, Birmingham Central Technical College, Suffolk-st., Birmingham.

GENERAL BUILDING WORK

Bingley.—Youth Council propose youth canteen and centre.

Carlton.—Notts C.C. propose additions at County Hospital for Mental Defectives, at £7,625.

Castle Bromwich.—Warwickshire E.C. propose Youth Centre, at £1,670.

Ealing.—Additions to be made to works, to plans by J. M. Monro & Son, Hill Farm, Leavesden, Watford, Herts.

Jarrow.—T.C. received sanction to borrow £1,048 for erection of three temporary shops at Simonside.

Leeds.—Yorkshire Association for Care of Cripples, 20, Park-row, propose extensions to Orthopædic hospitals at Thorp Arch and Kirby-moorside, nr. York.

Leek.—Staffs C.C. propose maternity unit at County Institution.

Macclesfield.—Vicar, the Rev. A. Clarke, and Churchwardens of Christ Church Parish Church propose parochial hall at Church-rd.

Mansfield.—Board of Management of Mansfield and District General Hospital propose rehabilitation centre at Crow Hill, Crow Hill-dr.

Middlesbrough. — Executive Committee of Middlesbrough Little Theatre acquired site for erection of new premises, at £14,000.

Oswestry.—Shropshire C.C. propose highway depot at Park Hall.

Oswestry.—Salop C.C. propose additions at Institution.

Preston.—T.C. propose adaptation of premises for additional accommodation for nurses at Sharoe Green hospital.—Committee of Preston Group of Masonic Lodges acquired Methodist Chapel at Saul-st., for conversion into Masonic Temple.

Rochdale.—T.C. approved extensions to Dunlop Cotton Mill, for Dunlop Cotton Mill, Ltd.

Rochdale.—Scouts' Welfare Committee propose permanent camp at Hurst Farm, Ashworth.

Salford.—E.C. applying to B.E. for permission to complete repairs at Tootal-rd. schools, Seedley.

Scarborough.—F. Baker, York-pl., Scarborough, prepared plans for alterations for Deardens, Ltd., and alterations at 51, Newborough, for J. H. Johnson.

Staffordshire.—E.C. propose Youth Centre, at Solihull, at £1,525.

Staffs.—C.C. propose maternity unit at County Institution, Wordsley.

Warwick.—Warwickshire C.C. propose additions at County Hospital, at £5,500.

Whitley Bay.—U.D.C. approved repairs to five houses at Whitley-rd., at £250 each.

Wolverhampton.—Branch of British Legion to rebuild Services Memorial Club at Waterloo-rd.

BRITISH RESTAURANTS AND CANTEENS

Bury.—E.C. propose dining centre at Holy Trinity school.—T.C. approved resiting for canteen kitchen at Elton.

Essex.—C.C. to acquire site at Ingatestone for central kitchen, subject to B. of E. approval.

Gateshead. — T.C. approved: Temporary kitchens and canteens at Morrison-st., Hawks-rd. and Elgin-rd., for B. of E.; temporary dining-room and scullery at Secondary school, for E.C.

Halifax.—West Riding E.C. propose alterations and improvements to canteen at Stones school, Ripponden.

Hebburn.—School canteen to be provided at St. Aloysius school. Plans by J. Dibble, S.

Hornchurch.—Plans approved by U.D.C.: Canteen kitchen, Rainsford Way Junior and Infants' school, for Essex C.C.; central kitchen, Upminster Junior and Infants' school, for Essex C.C.

Matlock.—Derbyshire E.C. approved purchase of site for central kitchen.

Northamptonshire.—E.C. propose school canteen at Rushton.

North Riding.—E.C. propose adaptation of village hall for dining centre at Ampleforth.

Notts.—E.C. propose additional school canteens, at £7,625.

Rowley Regis.—E.C. propose school dining centre at Reddal Hill school.

Wembley.—T.C. to submit scheme to M.F. for erection of "Nashcrete" hut at junction of Mollison-way and Waltham-dr., at £5,380.

Wilmcote.—Warwickshire E.C. propose central canteen kitchen at Wilmcote, at £4,950.

Wolverhampton.—E.C. propose school canteens at Low Hill and Fordhouses temporary schools.

TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H.M. Government departments.*

Bradford.—Completion of two partly built houses at Canterbury-av., and six at Birksland-st., for T.C.: *J. H. Pitchers & Son, Bradford, £2,079.

Cheshire.—Erection of ward block and nurses' hostel at Sanatorium, Loggerheads, Market Drayton, for Joint Sanatorium Board. Wood, Goldstraw & Yorath, chartered architects, Victoria-chbrs., Station-rd., Tunstall: *A. V. Shenton, Ltd., Hulme-rd., Longton, Stoke-on-Trent, £30,900.

Chester.—Works for T.C.: Repairs at Blacon Hall farm: *James Parker, £829; repairs to Dutch barn: *W. H. Smith & Co. (Whitchurch), Ltd., £334.

Coventry.—Erection of temporary senior mixed school at Keresley Grange, for E.C. Steane & Nolan (LL.), architects, 5, Queen Victoria-rd., Coventry:—

Prescott (Contractors), Ltd., Birmingham	£12,537
A. Matts & Son, Ltd., Coventry	9,038
J. Parnell & Son, Rugby	8,879
E. Harris & Son, Coventry	8,843
Fredk. Hocking, Coventry	8,762
W. H. Jones & Son, Ltd., Coventry	8,626
T. Bates & Son, Ltd., Coventry	8,619
H. Clarke & Son, Ltd., Coventry	8,567
Gilbert Cole Estates, Ltd., Northampton	8,550
J. C. Grewcock, Burton-on-Trent	8,521
E. H. Burgess, Ltd., Leamington	8,232
Garlicks, Ltd., Coventry	8,055
Cross & Son, Coventry	8,025
K. B. Benfield & Co., Ltd., Coventry	7,971
J. K. Monsell, Ltd., Coventry	7,958
*J. Daniels, 7, Russell-st., Coventry	7,377

Ealing.—Erection of prefabricated hut and shelter at Wood End school, for T.C.:—

Raglan Building Co.	£1,405
P. Bilton, Ltd.	1,324
W. J. Dickens, Ltd.	1,215
G. Wood, Ltd.	1,184
Perry's (Ealing), Ltd.	1,112
*K. L. Williams, Southall	1,058

Liverpool.—For painting work at Alder Hey Emergency Hospital, for T.C.: *W. H. Snow, Ltd., Liverpool, £1,040.

¶London (Air Ministry).—List of new contracts to value of £500 or over for week ended June 3.

Building work: Chapman, Lowry and Puttick, Ltd., Haslemere, Surrey.

Erection of structural steelwork: Redpath, Brown & Co., Ltd., London, W.1; Smith, Walker, Ltd., London, S.W.1; Moreland, Hayne & Co., Ltd., London, E.C.1.

Heating and hot water supply work: The Ray Heating Co., Ltd., Leatherhead.

General maintenance work: Pochins (Manchester), Ltd., Bowden, Ches; Wm. Nimmo (Builders), Ltd., Glasgow; Patching & Co., Worthing; Robison & Davidson, Lockerbie, Annan; John Laing & Son, Ltd., Carlisle; G. E. Wallis & Sons, Ltd., Gravesend.

Painting work: F. Troy, London, N.W.3.

Well-boring work: Le Grand Sutcliffe and Gell, Ltd., Southall, Middx.
Agricultural work: Agricultural Contractors, Ltd., Sudbury, Suffolk.

Surfacing work: F. Haslam, Ltd., Doncaster; J. B. Warke & Co., Castlerock, N. Ireland; G. Gregg & Sons, Ltd., Larne, N. Ireland.
Installation work: Rigg and Remington, Ltd., London, N.W.7.

¶**London (Ministry of Works).**—Contracts placed by M.O.W. during week ending June 1:—
Ches: Building work, James Crosby & Sons, Ltd., Carr Wood, Hale, Ches.
Dumfries-shire: Civil engineering, Wm. Tawse, Angusfield, Rubinshaw, Aberdeen.
Durham: Building work, E. Jeffcock (Contractors), Ltd., Walbottle-rd., Newburn-on-Tyne.
Gloucester: Civil engineering, Demolition & Cons. Co., Ltd., 10-13, Western Mail-chbrs., St. Mary-st., Cardiff.
Lanarkshire: Building work, J. Miller & Partners, Ltd., 88, Hanover-st., Edinburgh.
Lancs: Building work, F. Warburton & Son, Chapel-la., Stockton Heath.
Norfolk: Building work, H. Bullen & Sons, Central-rd., Cromer, Norfolk.
Ross-shire: Civil engineering, James Millar & Sons, Ltd., Millar-pl., Edinburgh.
Sussex: Building work, Frank Duke, Ltd., Newham-la., Steyning, Sussex.

¶**London (War Dept.).**—Works contracts placed by War Dept. for week ended May 27:—
Yorks: Miscellaneous work, J. W. Maw & Sons, Ltd., York; Allton & Co. (Contractors), Ltd., Ripon, Yorks.
Lancs: Miscellaneous work, J. Webster Bros., Ltd., Liverpool 15.
Notts: Hutting (erection), Henry James (Mansfield), Ltd., Mansfield, Notts.
Monmouthshire: Miscellaneous work, J. Thomas & Sons, Ltd., Newport, Mon.
Glamorgan: Miscellaneous work, Copp Bros., Ltd., Barry, Glamorgan.
Berks: Miscellaneous work, A. J. Styles, Ltd., London. S.W.19.

Mansfield.—Works for T.C.—Erection of sub-station, for T.C.: *Henry James (Mansfield), Ltd., Station-st., Mansfield, £188; external painting of Clifton hospital, interior painting and decoration of reference rooms and junior and adult lending sections at Central Library: †Alfred Beevers & Sons, Great Northern-st., Huddersfield.

Merioneth.—Erection of prefabricated canteen kitchen and dining-room at Harlech school, for E.C. Norman L. Jones, County Architect, County Offices, Dolgelley:—

Makin Construction Co., Ltd., Cardiff ...	£1,800
D. R. Pugh & Son, Dolgelley	1,365
G. Jones-Williams, Harlech	1,260
*Davies Bros., Barmouth	1,181

(Subject to B. of E. approval.)

Salford.—Erection of prefabricated hut, etc., at Salford Grammar School, for E.C.: *E. B. Jones & Rawlinson, Ltd., Salford, £1,381 10s.

Skipton.—Construction of settling and storm water tanks, percolating filter, humus tanks, etc., at Steeton sewage disposal works, for R.D.C. A. Rodwell, E. & S., Council Offices, Granville-st.: *J. Miller & Partners, Ltd., Spring Vale Works, Bristol-st., Birmingham 5, £2,576.

South Shields. — Repairs at Laygate-la. Infants' school and erection of shelter accommodation, for E.C. Howard Hill, architect, Winchester-st., South Shields: *Henderson Bros., Smith-st., Tyne Dock, South Shields.

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